NEPAL
RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT
(No. 367-0129)
FINAL EVALUATION

Prepared for:
His Majesty's Government of Nepal
and
US Agency for International Development
Kathmandu, Nepal

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Finally, the Team would like to thank HMG and AID/Washington for providing this opportunity to evaluate the Rapti Zone Rural Development Project.

Washington, DC
October 1985
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<th>Acronym</th>
<th>Definition</th>
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>ADB/N</td>
<td>Agricultural Development Bank of Nepal</td>
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<td>AE</td>
<td>Adult Education</td>
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<tr>
<td>AIC</td>
<td>Agricultural Inputs Corporation</td>
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<td>AID/W</td>
<td>Washington, DC office of the US Agency for International Development</td>
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<tr>
<td>APROSC</td>
<td>Agricultural Projects Services Center</td>
</tr>
<tr>
<td>ATU</td>
<td>Appropriate Technology Unit</td>
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<tr>
<td>CDO</td>
<td>Chief District Officer</td>
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<tr>
<td>CIDB</td>
<td>Cottage Industry Development Board</td>
</tr>
<tr>
<td>CSI</td>
<td>Cottage and Small Industries (Project of the World Bank)</td>
</tr>
<tr>
<td>CSP</td>
<td>Cropping Systems Program</td>
</tr>
<tr>
<td>CSU</td>
<td>Colorado State University</td>
</tr>
<tr>
<td>CY</td>
<td>Calendar Year</td>
</tr>
<tr>
<td>DCVI</td>
<td>Department of Cottage and Village Industries</td>
</tr>
<tr>
<td>DH</td>
<td>Direct Hire</td>
</tr>
<tr>
<td>DIHM</td>
<td>Department of Irrigation and Hydraulic Meteorology</td>
</tr>
<tr>
<td>District</td>
<td>One of the 75 basic administrative units into which Nepal is divided</td>
</tr>
<tr>
<td>DLDAH</td>
<td>Department of Livestock Development and Animal Health</td>
</tr>
<tr>
<td>DOF</td>
<td>Department of Forest</td>
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<tr>
<td>DOR</td>
<td>Department of Roads</td>
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<tr>
<td>DSCWM</td>
<td>Department of Soil Conservation and Watershed Management</td>
</tr>
<tr>
<td>DTO</td>
<td>District Technical Office</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>FMU</td>
<td>Financial Management Unit (of the PCO)</td>
</tr>
<tr>
<td>FNDH</td>
<td>Foreign National Direct Hire</td>
</tr>
<tr>
<td>FY</td>
<td>Fiscal Year</td>
</tr>
<tr>
<td>godown</td>
<td>Warehouse</td>
</tr>
<tr>
<td>ha(s)</td>
<td>Hectare(s)</td>
</tr>
<tr>
<td>HMG; HMG/N</td>
<td>His Majesty's Government of Nepal</td>
</tr>
<tr>
<td>H&quot;Y&quot;</td>
<td>High-yielding variety</td>
</tr>
<tr>
<td>IBRD</td>
<td>International Bank for Reconstruction and Development</td>
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<tr>
<td>IFAD</td>
<td></td>
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<tr>
<td>Ilaka</td>
<td>An administrative sub-division of the District, each of which has 9 Ilakas</td>
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<tr>
<td>IRH/FP</td>
<td>Integrated Rural Health/Family Planning Services Project</td>
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<tr>
<td>IRR</td>
<td>Internal Rate of Return</td>
</tr>
<tr>
<td>IRD</td>
<td>Integrated Rural Development</td>
</tr>
<tr>
<td>JT/JTA</td>
<td>Junior Technician/Junior Technical Assistant</td>
</tr>
<tr>
<td>km(s)</td>
<td>Kilometer(s)</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<td>--------------</td>
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<tr>
<td>LBI</td>
<td>Louis Berger International</td>
</tr>
<tr>
<td>LDO</td>
<td>Local Development Office</td>
</tr>
<tr>
<td>MOA</td>
<td>Ministry of Agriculture</td>
</tr>
<tr>
<td>MCH</td>
<td>Maternal-Child Health</td>
</tr>
<tr>
<td>MPLD</td>
<td>Ministry of Panchayat and Local Development</td>
</tr>
<tr>
<td>MTE</td>
<td>Mid-Term Evaluation (1983 Special Evaluation)</td>
</tr>
<tr>
<td>MT</td>
<td>Metric tons</td>
</tr>
<tr>
<td>NPC</td>
<td>National Planning Commission</td>
</tr>
<tr>
<td>OE</td>
<td>Operating Expenses</td>
</tr>
<tr>
<td>Panchayat</td>
<td>Village, an administrative sub-unit of the District. The five Districts of the Rapti Zone comprise 230 Village Panchayats and 1 Town Panchayat.</td>
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**Planning and Development Collaborative International Project Coordinator's Office**

**Production Credit for Rural Women (Program)**

**US Peace Corps Volunteer**

**Person-day**

**Panchayat Development Training Center, Nepalganj**

**Project Extension Paper (USAID, January 1985)**

**Person-Month**

**Rural Area Development**

**Resource Conservation and Utilization Project**

**Royal Nepal Academy of Science and Technology**

**Rupees**

**Small Farmer Development Program**

**Training and Communication Unit (of the PCO)**

**Technical Support Unit (of the PCO)**

**United Kingdom**

**United Nations Development Program**

**United Nations World Food Program**

**United Nations International Children's Emergency Fund**

**United States Agency for International Development, Nepal Mission**

**Village**

The smallest administrative unit of the government, usually comprising a number of small hamlets. There are generally 9 wards in a Village.
CURRENCY EQUIVALENTS AND WEIGHTS AND MEASURES

June, 1980  
US $1 = Rs 11.9

June, 1982  
US $1 = Rs 13.1

September, 1985  
US $1 = Rs 17.4

For converting rupees to dollars over the life of the project, the average rate of US $1 = Rs 15.0 has been used.

1 hectare (ha.) = 2.47 acres = 10,000 square meters
1 kilometer (km.) = 0.61 miles
1 kilogram (kg.) = 2.2 pounds
1 metric ton (MT) = 1,000 kg.
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I. EXECUTIVE SUMMARY

A. Problem Overview, and US Assistance

The Rapti Zone Project began in 1980 with planned funding of US$ 33.0 million as the first phase of a proposed 15 to 20 year rural area development effort directed at the one million rural poor in the Zone area, one of Nepal's least developed. After a slow start, annual USAID Project expenditures increased from US$ 0.7 million in FY 1981 to US$ 4.8 million in FY 1985. US$ 15.4 million was expended on the Project by USAID and US$ 3.5 million was expended by HMG during fiscal years (FYs) 1981 through 1985. Scheduled to end in September 1985, the project was extended until September 1986.

The stated goal of the Rapti Project was to help HMG promote development to meet the basic needs of Nepal's poor majority, especially those in the "Middle Hills". The purposes were to improve production levels, income and other measurable quality of life indicators of Rapti Zone families and to improve local demand for and control of delivery systems, including those for agriculture, education, and resource management.

The Project strategy was to pursue balanced development and growth in the five districts of the Zone by increasing food and agricultural production, forestry and natural resource management, employment and skills development, road improvement and rural works, and institutional development. Institutional development was designed to support the important on-going political process of decentralization, devolving responsibility for planning, implementation, and for mobilizing local private resources for development to District and Village assemblies.

B. Purpose of Evaluation

The purpose of this evaluation was to assess Project progress through September 1985 and recommend 1) whether the Project should be continued after September 1986 and, if so, 2) the substantive content and strategy of the extended Project.

The Evaluation Team took into account serious concern about the effectiveness of multi-sectoral or integrated area approaches to development and assessed each component of the Project in terms of output, impact, manageability and sustainability. Because the evaluation was designed to serve HMG and AID, the Team was mindful of HMG's concern that a mid-stream change in donor strategy regarding area development projects might undermine the political process of decentralization and local development planning and implementation.

The evaluation's methodology included document review, interviews with implementors, beneficiaries and others, and observation of project activities and impacts. Three Nepalis and four Americans served as members of the Evaluation Team, and spent substantial time visiting all five Districts of Rapti Zone.
C. **Conclusions**

The Project was overly complex and disparate, its components remained separated rather than strongly linked and focused upon Project purposes. Management structure was fragmented, relying too much upon planned-for individual outputs of the Project's many components and unable to integrate them effectively to achieve Project purposes.

About 54 percent of the planned level of Project inputs was reached during the 1980-85 period. Substantial inputs were used for building construction and to support HMG operations. They were scattered among many activities, which claimed a great deal of management time and effort. Inputs were not focused effectively on key production sectors.

The Project did not achieve its--often unrealistic target--output production levels in any of its critical areas. However, it established a sound foundation for future growth in agricultural output which can be achieved with better coordination of technical, input and extension services. It also laid the basis for improving and preserving the endangered resource base through reforestation and soil conservation.

Most significantly, the Project contributed substantially to strengthening District and Village capacity to plan and manage resources effectively on a sustainable basis, particularly during 1984 and 1985. Private resources at the local level were mobilized and combined with external or new technologies to boost productivity, income, and quality of life in many instances.

D. **Summary Recommendations**

- Close out the Project (No. 367-0129), which represented the first phase of a 15 to 20 year bilateral effort;

- Initiate the second phase of the Rapti Zone development effort as an institution-building local development project more sharply focused on technology transfer in agriculture and the environment. Recommended project strategy involves three elements: a) continuing support for strengthening institutional capacity for managing development at District and Village levels; b) expanding and strengthening natural resource management programs; and c) concentrating resources efficiently and effectively on agricultural production in both valley and hill areas. This project's phase-in should ensure no disruption of important on-going activities; and

- Mission strategy should focus on coordinating Mission and other donor projects to supplement and reinforce project resources in the Zone.
II. PROJECT DESCRIPTION

The goal of the Rapti Rural Area Development (RAD) Project (No. 367-0129) was to assist HMG to address the basic needs of Nepal's poor majority, with special attention to the large, previously by-passed population in the Middle Hills.

The purposes were:

to increase measurable aspects of the quality of life, including income and production levels, of families in the Rapti Zone, [and] to improve local demand for, and control of, national level delivery systems for improved agriculture, health, education, resource management and family planning.¹

To achieve these purposes, inputs were provided in five broad areas: farming systems, renewable resource management, employment and skills generation, institutional development, and rural works. Inputs included training, technical assistance, infrastructure construction (such as buildings and roads), credit, materials and equipment, and support for operations and maintenance.

The Project began in 1980 as the first phase of a proposed 15- to 20-year development program operating in each of the Project area's five Districts--Dang, Pyuthan, Rolpa, Rukum, and Salyan. Management was provided by an HMG Project Coordinator's Office. Complete descriptions of Project activity are found in Annexes 4 to 24.

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III. PURPOSE, SCOPE, AND METHODOLOGY OF THE EVALUATION

A. Purpose

The purpose of this final evaluation of the Rapti RAD Project is to provide HMG and USAID with the means to:

- Measure progress and impact to date on a component by component basis, showing whether project outputs have contributed toward meeting project objectives and goals;
- Assess progress made in addressing those issues raised in the 1983 Special Evaluation which relate to the project's purpose;
- Assess the soundness and appropriateness of the project extension strategy; and
- Suggest medium and long-term strategies that will make rural development initiatives in the Rapti Zone responsive to local needs as well as program and policy concerns.

The final evaluation team was also asked to analyze several broad development issues in evaluating the project's effectiveness:

- The multi-sectoral or integrated area approach;
- Decentralization;
- The Project's institution-building approach;
- Participatory community involvement; and
- Distribution of benefits among the target population.

These and other aspects of the evaluation's purpose are detailed in the Statement of Work for the evaluation team (see Annex 1).

B. Scope

The evaluation team was asked to look at the Project's specific components. Recommendations for each of the individual components are included as Annex 2. The details of the assessment of each component, including findings, conclusions, and recommendations, are given in Annexes 4 through 22. Technical assistance and management issues are discussed in Annexes 23 and 24, respectively. Annex 25 discusses nutrition, the use of PL 480, and Peace Corps and Annex 26 examines women in development issues. Annex 27 answers specific questions in the scope of work on each of the five aggregate components.
o Farming systems;

o Renewable resource management;

o Employment and income generation;

o Infrastructure development; and

o Institutional development.

The broad development issues noted earlier, which cut across specific project components, are addressed in Annex 28. The assessments of progress made in addressing the 1983 evaluation issues and of the soundness of the PEP strategy are detailed in Annexes 29 and 30, respectively. Annex 31 contains an analysis of HMG institution-building efforts.

C. Methodology

A seven-person team, composed of three Nepalese and four Americans, carried out this evaluation in September and October 1985. The team members' areas of expertise included rural development, agriculture and natural resource development, rural works and infrastructure, project evaluation, and institutional development. The team included an HMG representative, an AID/Washington representative, and staff from three Nepali and American consulting organizations.

The evaluation derived its findings, conclusions, and recommendations from:

o Thorough study of project-related documents and project-supported or other studies containing information on the Rapti Zone's five districts. These documents and studies are listed in Annex 31;

o Interviews (see Annex 3) with many HMG, USAID, and contractor officers and staff from numerous departments, line agencies, and offices in Kathmandu and Washington, D.C.; a wide variety of the Project's and other field staff from all of the agencies active in the Zone; and

o Field observations in all five districts of the Zone over a period of three weeks, including extensive conversations, individually and in groups, with villagers, local field staff, and local leaders.

The team prepared the draft report during the first week in October in Kathmandu and discussed its contents with officials of concerned agencies before preparing the final version.
IV. EVALUATION RESULTS

A. Introduction

This section draws upon the comprehensive component-by-component analysis of Rapti Project progress and impact provided in the Annexes to this report.

Five years of Rapti Project program efforts were completed in September 1985 and a one year extension (through September 1986) was approved. A further extension proposed by the Mission was made subject by AID to the results of this evaluation.

The possibility of further project activity in the Rapti Zone and the desirability and feasibility of various courses of action for it has raised two principal concerns:

- **First,** whether such large multi-sectoral area development projects are feasible and practicable. Experience has shown that complex, multi-ministry projects, with their complicated implementation procedures, often perform poorly. It also has shown that effective strategies for alleviation of poverty and mobilization of internal resources for development may require multiple programs, sometimes via one project. To avoid prejudging this concern in Rapti Zone, the Project was evaluated by assessing its feasibility and practicability in term of results, manageability and sustainability; and

- **Second,** how to be sensitive to the HMG's need for continuity of donor support for the nation's rural development efforts undertaken during the Sixth and Seventh Five-Year Plans. The Government having taken politically sensitive and bold steps to strengthen decentralization (and the process of local participation and local mobilization of resources), a change in donor strategy that seriously undermined the Government's approach could be damaging to everyone's interests. Before jettisoning an integrated area approach entirely, an objective assessment of the degree of performance wrought by it in the case of the Rapti Project, and reasons for that performance, is important.

The following section deals with observations about the Project area, the Rapti Zone and the five districts of Dang, Pyuthan, Rolpa, Rukum and Salyan. HMG strategy and requirements for planning and support of decentralization are then reviewed (Section C). This is followed by an overview of Project implementation and the Evaluation Team's findings and conclusions. Section E presents the Team's recommendations.
B. Observations About the Project Area: Problems and Potential for Development

1. The problem: poverty and underdevelopment

Development in the rural areas of Nepal, where 95 percent of its people live, most in extreme poverty, is a central goal of the nation. The need for development is particularly acute in the Middle Hill areas of Nepal. There, population densities per unit of cultivable and grazing lands are extremely high, incomes are extraordinarily low, food production is far below requirements, and soil erosion and nutrient depletion have become so pervasive as to threaten the fundamental life support systems — agriculture, livestock and forestry — of the people. The problem is to achieve income and quality of life improvements for the very poor people who daily face these conditions in their villages.

The Rapti Zone is one of the poorest areas in Nepal, itself one of the poorest and least-developed countries in the world. The average per capita income for the Zone is Rs 1314 (US$ 76). In the mountainous "Hill" areas of the Zone, per capita income in 1984-85 is reliably estimated at Rs 1114 (US$ 64), less than half that of the per capita income estimate for the country as a whole. Dang District, with two large river valleys and much more favorable market access, registered a per capita income of Rs 1818 (US$ 104) in 1984-85, 60 percent higher than in the Hills but still well below the national average. These very low levels of income are amply illustrated by the fact that the best meal and place to sleep that a visitor in the Hills can find costs only six rupees or 35 US cents per night.

Poverty in the Zone is accompanied by all the symptoms of underdevelopment: e.g., malnutrition, low literacy, low school enrollment, poor quality education, non-existent health services in most villages, lack of roads, and no utilities, nascent markets, poor commerce, limited handicrafts, and no industry. People are dependent on agriculture, including by definition livestock and forestry, for their livelihood. In such a destitute area, with its steep mountainous terrain and fragile environment, economic growth, rural development and the alleviation of poverty will be slow and difficult. Importantly, it will be a process, one that to be successful must mobilize private resources at the local level.

2. Recent progress: growth and development

Despite an austere development base, economic growth and social development have taken place in Rapti. The pace of development, moreover, has accelerated, especially recently, according to all the persons with whom the Team met.
The most striking change has been the increased ease of transportation to and within the area. This was brought about mainly by the East-West Highway, under construction in Dang District for five years. The Highway, now complete except for a major river crossing (the Rapti) to be finished in February 1986, links Dang, and through Dang the Hill Districts, particularly Salyan and Pyuthan, with the major market centers, Butwal in the East and Nepalganj in the West. The construction by the World Bank of the Lamahi/Ghorahi/Tulsipur all-weather gravel road in Dang District (completed last year) also has provided an essential road link between Dang's major market centers and the East-West Highway. The three Project rural roads (200 Kms) which the Project improved play an important role in improved market access to Salyan, Pyuthan and Rolpa. Rukum still remains very isolated. Air service to Tulsipur, Dang and Chaurjhari, Rukum also improved communications.

The Northern East-West Highway, which would run through Rukum and which the Project designers assumed would progress to give High Hill farmers in the Zone incentive to increase production, is under construction in the Eastern part of the country and appears many years away from reaching Rukum.

Household incomes in the Zone correlate positively and highly with favorable market access, principally a function of roads in the area, and this mainly because of easier availability of farm inputs (including extension). Enhancing this access by improvement of major trails for inter- and intra-district access and communication, by development of market centers in strategically located areas, and maintenance of the three Panchayat district roads improved under the Project will further contribute to development in the Zone.

Other indicators of change (taken principally from the recent Rapti Zone Regional Assessment) are:

- Introduction of electricity--Transmission lines from India reached Lamahi and Ghorahi earlier in the decade and are now under construction to Tulsipur. A small diesel powered system is also being installed in Salyan this year;

- Increase of credit availability--Lending by the Agricultural Development Bank (ADB/N), which was about Rs 4 million in 1980-81 and which reached Rs 20 million in 1984-85, is projected to reach Rs 25-30 million in 1985-86. Lending by the Nepal Commercial Bank increased from Rs 22 million in 1981-82 to Rs 35 million in 1983-84. Lending by the Rastriya Banijya Bank nearly tripled from Rs 2.3 million in 1980-81 to Rs 7.7 million in 1983-84 (see Annex 8);

1PADCO, Rapti Zone Regional Assessment, September, 1985.

2Data provided by the ADB/N Zonal Manager in Dang to the Team.
Increase in tax collections--Between 1980-81 and 1983-84 contract tax collections increased from Rs 0.8 million to Rs 2.4 million; sales tax collections increased from Rs 0.4 to Rs 0.8 million; income tax receipts from Rs 0.8 to Rs 1.4 million; and vehicle tax receipts from zero to Rs 0.2 million;

Increase in education facilities--The number of teachers rose, for example from 1,299 in 1975-76 to 1,957 in 1980-81 to 2,591 in 1984-85;

Increase in local Government services--In all districts, national services (agriculture, livestock, forestry, education, soil conservation, health) have expanded in recent years, mostly as a direct result of the Rapti Project;

Increase in fertilizer use--Distribution of chemical fertilizers, which was close to zero in 1975 and 600 MT in 1980-81 rose to over 2,000 MT in 1984-85. It is projected to increase to 6,000-7,000 MT by 1989-90;

Increased use of high yielding varieties of cereal seed, particularly wheat (see Annex 9); and

Increased in construction and economic activity in urban areas--Ghorahi and Tulsipur in Dang and Churjahari in Rukum have experienced rapid growth, particularly in terms of houses and shops built, business/trading activity, local market development, public services growth and population increase;

3. Potential for future growth and development
   a. The Dang River Valleys

   More growth has taken place in Dang, particularly in the Dang and Deokhuri River Valleys, than in the rest of the Zone. This is due to Dang's more favorable location on the border with India (with which a considerable amount of border trade takes place), to its better communications east and west, to continuing in-migration from the hill areas, to its higher proportions of arable and irrigated land and to its importance to hill districts as a market center. This growth, however, has increased pressure on Dang's deteriorating forestry resources Dang is considered one of the most critically environmentally-impacted districts in the country.

   Dang's valleys have more potential for food and agricultural development--as well as in trade, commerce, services and light manufacturing--than the rest of the Zone. With respect to agriculture, it is estimated in the Rapti Zone Regional Assessment that if Dang's food grain yields were raised to levels prevailing in the Hills, a 50
to 100 percent increase in production would result. Taking advantage of this potential will require more effective organization and use of farm delivery services and the mobilization of village farmers in the effort. Furthermore, prospects exist for accelerating growth in agricultural production through increased year-round tubewell irrigation.

Although per capita income in Dang District is 60 percent higher than in the Hill Districts, there is also widespread poverty by virtue of its large proportion of landless or sub-marginal farmers. These poor need to obtain more benefits from Dang's growth. In Dang these are mainly the Tharus, one of the four major ethnic groups in the Zone and a target population group under the Project.

A prospering agriculture in Dang District will spearhead overall development within the District, by providing surplus agricultural production for trade with the rest of the country and/or export, and an expanding market for locally consumed goods and services. A prospering Dang District will help Hill Districts by providing increased employment, market and business opportunities and better sources of supply.

b. The Hill areas

The Hill areas of Rapti Zone present a picture of poverty, food deficit areas, and malnutrition, the latter particularly among the young. They are not, however, as isolated and cut off as they once were, especially in Salyan, Pyuthan and some parts of Rolpa and Rukum. Food gets into the Hills and some cash crops and livestock products get out. Remittances, very important in many areas, flow back into the Hills and help explain how many family households with very little land get by. (Over 50 percent of the households in some villages have one or more male members working away, mainly in India.)

In the Hill areas, the Team observed potential for cereal, fodder, horticulture and livestock production, certainly on irrigated land but also in uplands. It observed that extension work was not well organized nor well planned; that agricultural inputs and credit were not readily available in most villages; and that more research is needed, particularly on corn, millet, and upland farming systems (see Annexes 4, 5, and 9). In general, it will take a greater effort by farmers in the Hill Districts than in Dang District to increase yields and production.

The Team also observed that crop production, livestock and forestry were integral parts of the ecosystem at the village level and must be treated together in planning for and achieving this potential. In many and perhaps most villages, soil fertility is declining or has reached a very low plateau. Thus, increases in agricultural output must be achieved in a way that protects and saves the agricultural resource base.
Preserving the agricultural resource base is in many locales more important than generating increased production. However, more rational use of resources goes hand-in-hand with more efficient use of them. An encouraging sign is that over the past decade, aerial land use surveys indicate very little movement of marginal land into crop production. This is encouraging in that it suggests a slowing down of deforestation and misuse of land. But it also indicates that progress in agriculture can not come from putting more land into crops, as was the pattern in recent decades, but must depend on improved management of limited land resources and increasing productivity.

Although not to be over-emphasized, the Hill areas are not all alike. For example, while Hill Districts face overall severe food deficits, there are food surplus areas in Pyuthan, the Chaurjahari area of Rukum and elsewhere, while nearby there are food deficit areas. Differentiation in technology and management practices is needed to realize Hill production potential in horticulture, field crops, livestock and forestry.

Development in the Hills requires joint community action--because common effort is needed to rationalize land use, including common-use land and privately-owned farm land, and because local development requires mobilization of the private limited resources of many. It also requires villages to give the same priority, attention and commitment to their interrelated problems of agriculture, livestock, and forestry land use as they gave to improved schooling and drinking water systems in the past five years.

Hill District development, including off-farm employment opportunities, will be accelerated by increased market access and communication, achieved in part by trail development and road maintenance and improvement. The three Project rural roads improved road transport from Salyan, and to Pyuthan and half way from Pyuthan to Rolpa. They are, however, unfinished. (See Annex 12.) Provision is needed for maintenance to prevent rapid deterioration pending approval and implementation of a proposal of HMG to up-grade them to all-weather status. (The proposal is now being considered by the Asian Development Bank.) Trail improvement on key routes is a high priority of Villages and an important accelerator of development. More attention to their improvement and to the organization and promotion of local and district marketing centers and service centers is also required in District planning (see Annex 18).

3However, as the Team observed, malnutrition and hunger is not only a function of food production; there is serious malnutrition in food surplus areas, including those in Dang and Pyuthan Districts.
c. **Private sector development**

Generally, in Nepal, the private sector handles the grain trade, fruit and vegetable marketing, and trade in livestock products, as well as small-scale processing. The Government by and large handles the importation, storage and distribution of agricultural inputs including chemical fertilizer, seeds, farm equipment and plant protection chemicals.

Private sector activity has increased in recent years, particularly in Dang District. This increase is seen in the areas of transportation (buses and trucking), in rural markets (the expansion of markets in Chorahi and Tulsipur), in private contracting for road and building construction (see Annex 12), in the work of the Appropriate Technology Unit (see Annex 16), to a limited extent in seed production, and in private consulting for District development work (e.g., the design of drinking water systems and development studies.).

There are opportunities for further private sector growth. In particular, the scope for private production of quality seed (or other planting material) for cereals as well as pulses, vegetables, fodder trees, fruit trees, and grass is large. There are also opportunities for business persons in private sector marketing of chemical fertilizers, farm tools and equipment, tree nursery supplies, veterinary products, the supply of improved breeds of livestock for farmers, and in agro-industry.

Planning in Rapti Zone, needs to take into account measures to promote and support such private sector development.

C. **Observations Concerning HMG Planning for Rural Development and Decentralization in Nepal**

The HMG's approach to rural development, in evolution over the past 25 years, has aimed since 1978 at strengthening Village and District Panchayats as the vehicle for local development (see Annex 31). The issue of inter-sectoral coordination and integrated planning has been under scrutiny since the so-called integrated Panchayat Development Design of 1978. The issue of downward delegation of authority for planning and inter-sectoral coordination was resolved in the Decentralization Act of 1982. That act calls for five year plans and annual multi-sectoral programs at village, town and district levels based on local potentials and concerns. Local leadership and institutions are responsible for the preparation, implementation and evaluation of local plans. A central aim is to encourage maximum participation in the development process and mobilize increased local resources for development. Each line Ministry supported by the National Planning Commission provides, forecasts, planning guidelines and resources to each District.
In 1984, regulations and by laws implementing the 1982 Decentralization Act were promulgated. Under these regulations, line agency offices in the Districts are redesignated as District Panchayat Offices. The Local Development Officer (LDO), as executive secretary of the District Panchayat, was given increased authority to coordinate and monitor all Line Agency District Officers. Representatives of line agencies at Regional Offices (and those delegated to a zone from a regional office) are to provide additional support to the Districts. Starting in 1985-86, Districts assumed responsibility for the preparation of sectoral programs (education, health, agriculture, forestry, etc.) under financial ceilings provided by HMG. (See Annex 22.)

The Sixth and Seventh Plans placed great emphasis on rural development as the means to carry out national policy for achieving economic growth and expanded equity and opportunities for Nepal's poor and disadvantaged groups. To make decentralization work effectively, the Seventh Plan (1985-90) calls for:

- Strengthening of planning capability at the local level;
- Decentralization of authority within the bureaucracy by institutionalizing a support system for needed technical, financial, and policy backstopping from the Center; and
- Continuous monitoring of successes and problems at the local level.

The main objectives of integrated rural development IRD projects, as set forth in the Sixth Five Year Plan were to:

- Improve the lot of farmers;
- Make rural development a self sustaining process;
- Develop leadership capability of local farmers through their participation in decision making;
- Increase productivity by employment of idle rural manpower;
- Integrate and coordinate rural development activities; and
- Alleviate rural poverty.

For development administration purposes, the country is organized into 14 Regions and 75 Districts.
The Seventh Five Year Plan, further provided that rural development was to:

- Increase production, especially food production;
- Create increased employment opportunities;
- Provide at least the basic needs of the people; and
- Restore/improve the ecological balance in rural areas.

It also planned more resources for rural development, particularly to increase production and employment. Rural development projects with donor assistance are envisaged as a means to help bring about balanced regional development (by providing assistance to accelerate development in certain backward zones). The Seventh Plan also aimed to continue to deal with issues of equity, especially for poor farmers.

D. Summary of Project Implementation, 1980-1985

1. Overview

The PP goal, the same as that of the overall AID program in Nepal at the time, was to help HMG promote development in such a way as to meet the basic needs of Nepal's poor majority, with special attention to the Middle Hills. The Project purposes were:

- To increase the measurable aspects of the quality of life, including income and farm production levels, of families in Rapti Zone; and
- To improve local demand for, and control of, national level delivery systems for improved agriculture, health, education, resource management and family planning.

Four broad targets were defined to achieve these purposes:

- Improve food production and consumption quantitatively and qualitatively by households in the Zone;
- Improve and increase income-generating opportunities within the Zone which are accessible to poor farmers, landless laborers, occupational castes, and women;
- Strengthen the capacity of Panchayats and other local organizations to plan, implement and sustain local development efforts; and
- Increase the availability and use of national delivery systems in the Zone.
The evaluation found that the Project achieved significant impact on the third and fourth of these targets. A significant impact was not found on the first and second targets. However, a sound basis has been laid for achieving impact in a follow-on phase, bearing in mind that development in Rapti Zone will require a sustained effort over 15-20 years, a period the original project design envisaged.

2. **Level of project activity achieved**

The Project was designed to provide inputs activity of US$ 6-7 million per year starting in 1980-81. However, a very slow start took place in the first two years of the program, reflecting serious difficulties encountered in organizing and staffing a project requiring involvement and cooperation of several different Ministries, many Departments, four Public Corporations, Zonal offices, the Regional office in Surkhet and five Districts. Delays also occurred when the 1983 Special Evaluation reviewed the project design and recommended a series of changes in focus and concentration of resources (see Annex 28).

Financial management problems also retarded project execution. Although HMG took steps to strengthen District capacity to manage and account for development funds, the timely release of approved budgets for program implementation by the Ministry of Finance was (and has continued to be) a problem, as was slow accounting for expenditures by line agencies at the District level. USAID's initial requirement for its financial review of expenditures before reimbursement and for design approval of construction and small rural works projects also slowed down the implementation process.

During the past two years, project implementation improved markedly; annual expenditures reached the level of US$ 5 million per year, including both AID and HMG contributions.

3. **Project targets**

The Project did not meet many of the design targets set in 1979-80. However, some important targets were unrealistic.

The PP specified a five percent per year increase in the production of cereals and pulses, and overall growth during the 1980 to 1985 period of 27 percent. This implies that agricultural inputs were expected to have immediate effect. Moreover, the PP postulated increases in the annual growth rate for production of these crops not realized elsewhere in the country, either in the Middle Hills or even in the Terai, where conditions are much more favourable for agricultural growth. The PP also specified a 25-35 percent increase in milk, manure, meat and wool production without defining how such increases were to be achieved. While the underlying analysis of measures to promote and achieve agricultural growth in the Project
feasibility study appeared sound, HMG and AID should have recognized that these farm output targets were overly optimistic for the five-year period and needed to be scaled down.

In the case of the important undertaking to upgrade the three Project rural roads, the design seriously underestimated the cost of the proposed upgrading by a factor of about two.5

4. Institutional development

The Project achieved considerable progress in the area of institutional building; that is, strengthening District and Village capacity to plan, implement, mobilize resources and sustain local development. It also resulted in increased availability and use of national delivery services, in all districts although Rukum District is less well served than the other four.

As provided in its design, the Project supported the physical upgrading and increased staffing and logistics support ability of the District Local Development Officer (LDOs) and District Technical Officers (DTOs). In addition, storage facilities and training conference centers have been (or are being) constructed in each district. A significant effort was carried out for training of Village and District officials.

The project resulted in increased staff at the district level, including the LDOs, DTOs, District Planning Officers (DPOs), and District Training Officers. The DTOs have been strengthened by the hiring of overseers (trained engineering technicians) and supervisors. Training has been provided for LDOs and DTOs and their staff. District capability to procure, to carry out feasibility studies for local development schemes, to do necessary design and engineering work (with some assistance from the Zonal Technical Support Unit), to manage execution of district-level projects, and to help villages execute and manage their projects, has enormously increased by comparison to 1980 (see Annex 21).

The capability to manage and account for public funds has also improved, with the assignment to each District of a Finance Controller and more accountants and bookkeepers.

Many of the 230 villages in the Zone in the past five years had opportunities to participate in their own local development efforts through local users groups for school improvement and functional literacy training, the construction of drinking water systems, minor irrigation, improved trails and other small rural works. These projects

5A factor of two if the target was to improve the roads to four-wheel drive or "tractorable" standard, and a factor of four if the target was to improve them to "truckable" standard (See Annex 12).
have been supported by an impressive degree of local leadership, local participation, and mobilization of local resources. (See Annex 19 on education and Annex 14 on small rural works.)

The Project has supported 26 sub-District centers providing agricultural and livestock services in their areas. The service center concept (see Annex 18) provides for a center in each Ilaka, providing a variety of rural services, including postal, credit and savings, health, livestock, agriculture, agricultural supply, and others. Such centers are also seen as strategic locations for local markets.

Improved operating facilities, increased staffing and better-qualified staff have strengthened line agencies in the Districts. The following indicators suggest the impact that has taken place:

- Agricultural extension staff at the Junior Technician (JT) and Junior Technical Assistant (JTA) levels has increased from 64 to 101 persons between 1980 and 1985 (see Annex 4);
- Livestock technical staff has increased from 4 to 80 persons (see Annex 5);
- Forestry staff has increased from 73 to 103 persons (see Annex 6);
- ADB/N professional/technical staff has increased from 21 to 63 persons (see Annex 8); and
- AIC professional/technical staff has increased from 14 to 24 persons (see Annex 9).

5. Implementation of construction and the rural works component

A construction program was carried out to provide storage, office and training facilities and rural service centers for Districts and to support Zonal offices (for example the Soil Conservation Center in Tulsipur). About half the buildings were completed and the rest were under construction, with completion expected by 1986-87 (see Annex 15). The rural works program resulted in 72 locally approved and implemented projects (see Annex 14). It also resulted in upgrading the three Project roads to tractorable quality (see Annex 12).

The construction program is an important element in strengthening district development capacity and delivery systems. The small rural works program provided villages with resources for projects of importance to them and their local development. More significantly, it
has been a vehicle to generate village enthusiasm and active involvement in planning and managing their own local development projects.

The effort to implement these activities has absorbed a great deal of time and energy of Project management and consequently detracted from other elements of the program. It would be expected, however, that construction would not be a major input into an on-going effort although continued support for rural development projects for villages is desirable. Full responsibility for planning and implementation needs to be transferred to the District, as was recommended in the 1983 Special Evaluation. (The Project Coordinator's Office has maintained on an interim basis responsibility for project design).

The Project achieved good results in upgrading the Rapti rural roads to permit tractor-hauled freight and four-wheel drive passage, as well as foot traffic. The impact of these roads in improving market access and communications is significant and constitutes a major contribution to the development of the area. They now can be used seven to eight months per year (major river crossings prevent passage in the monsoon season). The Project has also funded a feasibility and engineering study for construction of the five major bridges and other work required to bring these roads to all-weather standard. HMG has proposed this work as a project for Asian Development Bank funding. Pending such a project, provision is needed to ensure funding for maintenance and to proceed with biological road stabilization (see Annexes 12 and 13).

6. Food and agricultural development

The Project did not achieve significant zone-wide increases in agricultural, horticultural, and livestock productivity. The Project did establish a more solid foundation for future progress which, however, needs to be strengthened. The Cropping Systems Program (CSP) was significantly strengthened in the last two years of the Project. It has identified promising technologies, particularly for irrigated rice and wheat, where potential for yield increases is great, but also for maize and mustard. The CSP needs to be continued and strengthened.

Agricultural extension staff at the JT and JTA level has been strengthened significantly since the 1983 special evaluation. The Project expanded livestock veterinary and extension services from three sub-District centers to 26 such centers at present. The number of animals treated in 1984-85 was ten times greater than in 1980-81 (although less than 15 percent of the animals received any treatment). The horticultural farm in Rukum District distributed over 12,000 packets of vegetable seed in 1984-85, compared to 300 packets five years earlier, but the targets for improving horticulture were largely unachieved due to lack of village involvement and a strong extension effort.
The Project made considerable progress in increasing the supply and availability of rural credit through the Agricultural Development Bank of Nepal (see Annex 8). The Bank's Small Farmer Development Program (SFPDP) showed good results and provided important financial and technical assistance to groups of poor farmers in a number of areas of the five districts. The SFPDP program expanded from one site with 30 participant farmers in 1980 to 20 sites with more than 2,500 participant farmers in 1985.

In expanding the agricultural production effort, there needs to be more focus on financing inputs for cereal production and in ensuring that credit is more readily available to farmers in villages not located near District Centers.

As pointed out in Annexes 4 and 5, there is a potential for real growth in agriculture using available and expected technologies, expanded credit and private sector initiatives in fertilizer distribution, seed production, forest management, minor irrigation, etc. The first five years provided an improved base for increased crop and livestock production.

The best indication of the Project's progress, and of the potential the Zone holds for increases in agricultural productivity, is found in the number of pockets where improved technology, extension services, and inputs have been coordinated effectively, resulting in adoption of improved varieties by a large majority of the pockets' farmers.

There are several reasons why the improved base has not yet resulted in District-wide improvements in productivity. First, and most important, was the ineffective delivery of sufficient quantities of fertilizer and improved seed. The Agricultural Inputs Corporation's (AIC) network of branch offices has been extended to the Hill Districts and Project targets for increasing AIC storage facilities have indeed been met. However, after five years of effort, the agricultural supply system for the Zone, and particularly for the Hill areas of Dang and the four hill districts is inadequate. AIC has not succeeded in developing local production of quality seed for farmers. It has not developed a system to distribute improved varieties of quality paddy and wheat seed to farmers when they need it and in the quantities desired. (An estimated 25 percent of farmers in the Zone are using improved varieties of cereal seed, largely through farmer-to-farmer distribution without quality control and with some degeneration). Fertilizer distribution increased substantially, but most fertilizer was supplied to a few villages in Dang. In the hill areas, only about 5 percent of farmers use chemical fertilizer or have reasonable access to it. AIC has resisted developing a workable private sector approach for fertilizer distribution. Major improvement of the agricultural supply system for Rapti Zone is considered a necessary condition for achieving significant impact in crop production.
Second, as noted above the CSP only grew to a significant level during the last two years of the Project. This has been sufficient time to identify some successful technologies in rice, wheat, maize, and mustard but not sufficient time to move these from field trials through block production programs to wide-spread adoption. Nor has the program had sufficient time to expand its coverage to other crops, e.g., pulses. Furthermore, coordination with the mission's seed production and cereals production projects was weak and a planned hill agricultural research project, upon which the Rapti Project could have drawn, was never implemented. The new Agricultural Research and Production (ARP) Project should help provide needed technologies for improved upland production.

Third, the main increases in agricultural and extension field staff were made during the last two years, again insufficient time for achieving significant impact in overall production for the Zone. Furthermore, the training provided them was far below (less than one-fifth) the level called for in the PP. Paraprofessionals, and progressive farmers, especially women, were not involved in the extension program to the degree called for. The Project did construct an Agricultural Training Center, which opened last year. (This new facility is located on HMG Agricultural Farm near Nepalganj, outside the Zone, and was designed to provide expanded farmer and in-service-training for agricultural staff throughout the fourteen districts of the mid-Western Region, of which Rapti Zone is a part.)

Finally, there was inadequate guidance and support from the Department of Agriculture for its staff in the Districts ...d in the formulation and monitoring of the five-year effort. Current district programs lack direction and appear based on a standardized set of activities which District officers are required to complete. Monitoring is done by review of reports of physical targets accomplished. This widespread practice of physical target reporting does not serve the country's development process well. Physical targets are invariably reported as having been met or more usually, modestly exceeded. (Officers will obviously arrange their work to fulfill their targets whether or not they have any impact.) This reporting goes on year after year, suggesting incorrectly that some real impact must be taking place.

In continuing and redirecting the effort to develop food and agriculture in the Zone, it will be important to ensure the active participation and support of the Ministry and the Departments of Agriculture and Livestock. This support may be provided through the regional office, or through an arm of the regional office located in the Zone (see Annex 24). It will also be important to devise and introduce a monitoring system that reflects more clearly progress being achieved, problems encountered and remedial action required.
The major conclusion drawn by the Evaluation Team is that a better planned district-by-district effort, with well defined, practical targets related to local circumstances, needs and potentials—expanded to cover a much higher proportion of the villages of the area—is required to produce significant impact in Dang valleys and the Hill areas. The District plans need to be linked to plans developed locally by Village Panchayats, joining together development activities in land use planning, forestry, soil conservation, irrigation, pasture land improvement, fodder production, livestock, horticulture and crop production.

7. Forestry and natural resources

The most critical natural resource problems are restoration of degraded areas, protection of areas critical to watershed functioning (e.g., riverbelts), and improved productivity of areas with higher potential, so that demand for forest products, including fodder and fuelwood, can be met sustainably.

Following a very slow start, and in response to strong recommendations of the 1983 Special Evaluation good progress was made in the past two years in building up capacity in the Zone and the Districts to work with villages in reforestation and management of existing forest resources, and in soil conservation. (See Annex 7, 8 and 13.) The Project set in place an effective basic capacity for producing trees and establishing them on the landscape. Given the capacity and experience of the DOF in community reforestation in the Rapti Zone at the beginning of the Project, its capacity grew at a very satisfactory rate. DOF's capacity to support community-based management of existing forest areas showed less overall progress, but a strong base of experience was laid in Pyuthan District. The total impact of the program is still limited, with only about 15 percent of the Village Panchayats in the Zone involved. However, forestry development is a slow process. Attention was rightly given to first setting in place effective capacity and procedures.

Nevertheless, the quality of DOF staff and community workers must be further improved through training and incentives for quality performance. More attention must be given to planning and monitoring procedures.

6Village Panchayat Protected Forests (PPF) are government-owned forest lands to be transferred to village management and use, as opposed to village Panchayat Forests (PF), which involve reforestation by villagers on deforested areas.
The rate of expansion which is practicable, manageable and sustainable, and also consistent with the strategy of involving the villages and doing the work well, needs further analysis. A level of effort sufficient to have major impact on the problem of preserving and managing natural resources in the Zone will however, require an expansion of perhaps six times current annual plantings.

8. Employment and Skills Development

The Project carried out activities in education, cottage industry, and appropriate technology under this heading. Education activities contributed to school improvement, teacher training, and village adult education (which provided training for some 40-45,000 villagers in literacy, sanitation, health, home sciences and agriculture), despite financial management problems (see Annex 19). Education activities were phased out in 1984 with the school improvement program shifted to the rural works sub-component in 1985.

An ineffective program--limited to training--was carried out by the Cottage and Village Industries Board and the Cottage Industry and Handicraft Emporium (see Annex 17). Project funding ceased in 1984-85.

The Project achieved considerable success with an Appropriate Technology Unit (ATU) fully financed by the Project and managed by the ADB/N (see Annex 16), but the work of ATU has had only limited impact on production, incomes, or quality of life.

In 1985, the Project provided assistance for a UNICEF-initiated program for Production Credit for Rural Women (PCRWR). The program has recently started up in Salyan and Pyuthan and continued in Dang, with plans for start-up in Rolpa and Rukum in 1986-87 and has resulted in the assignment of Women Development Officers to Salyan, Pyuthan and Dang. The Evaluation Team concluded that ideally the PCRWR program should be melded with the SFDP and managed in Rapti Zone as part of the national effort. In 1985 a pilot Household Production System program covering two villages in each District was initiated (see Annex 11).

9. Project Management

HMG and local officials encountered in this Project appear to be reasonably well qualified persons, generally motivated, enthusiastic, and committed to the program. The Project Coordinator's Office in Tulsipur, Dang contributed effectively to institutional development, described in Section 4 above, and to the implementation of the construction and rural works program (Section 5 above).

The Project has also proved to be complex, involving a large number of agencies and organizations in an effort difficult to manage and to focus for impact. In practice, the project design did not produce the effective management structure sought by the designers. Project experience has shown that, as constituted, the PCO was not able
to "drive" the project toward the impact envisaged. The scattered approach, derived from the project's design of clusters of activities, has impeded implementation and prevented sufficient management attention to critical problems and constraints. A major difficulty was the failure to include forceful line agency participation—particularly of agriculture, livestock and forestry—in the project management structure.

The Team concluded that there is a need to concentrate for impact in critical areas, and that management will be facilitated by concentration on fewer programs with clear objectives and realistic targets (see Annex 24).

E. Recommendations

1. Summary recommendation

Close out the existing Rapti Zone Area Development Project (No. 367-0129) and replace it with a more sharply focused project for a second five-year phase of the 20-year Rapti Zone development effort. The new Project should concentrate on:

- Continuing institution-building support for decentralization and for increased capacity for planning and managing development by District and Village Panchayats;
- Increasing/improving Food and agricultural production; and
- Strengthening the forestry and natural resource management programs through technology transfer.

These areas of concentration are highly interrelated components, each essential to the success of the other two.

The new Project should be designed based on lessons learned from the existing Project. The phase-out and termination of the existing Project and its replacement with a new effort should be worked out to avoid a slowdown of the three components of the new project. The new Project should be designed to begin in FY 1987.

2. Decentralization

Design the new Project to further strengthen District and Village Panchayat capability to plan and manage local development, especially in agriculture, forestry and local development activities in direct support of these productive sectors.

Technical assistance and training should be directed at LDOs, line agency officers, District Planning Officers, District Sectoral Chiefs, Sectoral Assistants, District and National Panchayat members, and Village Panchayat leadership. Assistance and training should cover such areas as District and Village-level planning; design, approval and
implementation of new projects and programs; resource mobilization and management; private sector development; project budgeting and accounting; dealing with procurement and logistics problems; and regular monitoring and evaluation of development programs, all at the District level or below.\(^7\)

The Project should support rural works implementation at and below the District level as well as implementation of other local development activities such as purchase of horticulture seedlings, funding of forestry nurseries and planting, funding of soil conservation land restoration projects, improvement of major trails, and specialized community education activities (see Annex 14).

3. **Local planning**

Design the new Project with clearly established plans and well-defined targets for each District, to be developed with District leaders. Project activities in local development, food and agricultural production, and forestry and natural resources management should be linked with specific village plans. Village plans should be developed sequentially over the five-year period. All villages should be provided with an opportunity and assistance to draw up and initiate a village-level land-use, farm production and natural resource program during the life of the Project. This program would cover cereal crops, horticulture, pasture improvement, forestry, fodder production, animal husbandry, minor irrigation, soil conservation and farmer training and would generate local resources for its execution. At least one Village per Ilaka (there are nine Ilakas per District) should be targeted each year for planning. Procedures should be established to ensure sufficient technical advice, agricultural inputs and rural credit to effectively support village plan implementation.

4. **Food and agricultural production**

The new Project should provide resources, and establish actionable, manageable and realistic targets, to achieve significant impact on food and agricultural production in the Dang valleys and the Hill areas during its five-year life.

The design of the new Project should ensure that the agricultural supply systems in the Rapti Zone is restructured and extended to cover all the villages in the area effectively. Seed production and fertilizer distribution should be improved via the private sector, together with more effective AIC operations.

\(^7\)In this report, Village (with upper-case V) is used synonymously with Panchayat.
Improved technologies and crop production methods, and improved animal health, nutrition, and management practices should be drawn from the Mission's Agricultural Research Project and livestock efforts and elsewhere (see Annexes 4 and 5). The Project should provide technical assistance and training in agriculture at and below the District level, especially for extension staff. Project support for improved irrigation should focus on existing small-scale systems and on-farm water management.

Agricultural credit should be expanded by the ADB/N and be included as an integral aspect of local planning. Agricultural credit systems should be designed to facilitate farmer access to credit in their villages, with increased priority to cereal, pulse, fodder, and horticultural production (see Annex 8).

The Project design should require that clear understandings be reached with HMG on the following crucial points:

- Measures to restructure the agricultural supply systems with major privatization of seed production/distribution and fertilizer distribution;
- The supply of subsidized agricultural inputs, particularly chemical fertilizer—anticipating that requirements over the life of the Project would be at least three to four times the amount supplied in the five years of the existing Project; and
- Employment, training, assignment and retention of sufficient women technical field personnel to produce outreach impact in women-dominated areas and sub-sectors

5. Forestry and renewable resource management

The new Project should provide resources for an expanded effort in forestry and renewable resource management. Seedlings production and supporting input supplies, including credit, should be developed. The Project should look to private sector forest development via enhanced community forestry activities, community management of Panchayat Protected Forests, and privately leased land development to expand forest production. Soil conservation/environmental restoration should emphasize mobilization of private local resources and leadership supported by, for example, funding for specific materials (such as gabion wire and seedlings). The Project should help increase local political control over livestock numbers to relieve pressure from over-grazing on a regenerating natural resource base. Technical assistance and training in forestry and environmental restoration should be provided by the Project in support of forestry and environmental objectives.
An understanding should be reached with HMG that the Ministry of Forest and Soil Conservation would train or hire sufficient community foresters, including women, for each District in the Rapti Zone and, with the District Panchayats, to sharply direct their efforts toward community forestry, privately leased forests and increased turnover of existing forests to village management. An understanding should also be reached on the need to monitor and to support animal grazing control campaigns in the Districts.

6. **Project management**

Overall project direction should be provided by an inter-agency office staffed by the Ministries of Panchayat and Local Development (MPLD), Agriculture and Livestock, and Forestry and Soil Conservation. Overall Project direction should be assumed by MPLD, working directly and closely with the Ministries of Agriculture and Forest. Principal responsibility for program implementation should be at the District level. Given the distance from the Regional Headquarters in Surkhet to the Rapti Zone, the Regional Offices of the MPLD, Agriculture, and Forest should assign line officers to an inter-agency Sub-Regional Office in Tulsipur, delegating to them sufficient Regional Office authority to coordinate the new Project at the District level. These line agency officers would work together to help Districts shape and promote their Project activities. This office should also provide technical assistance and training support at the District and Village levels.

The staff of the existing PCO should be reduced by about half (subject to analysis by the design team) in 1986-87, from its present level of 75 authorized posts, with the transfer of full responsibility to the Districts for procurement and rural works design and implementation (see Annex 21), and the balance of the staff transferred to the new inter-agency office.

In addition to HMG technical officers' support, the Project should provide expatriate technical assistance in local development, agriculture and forestry under a strong team leader. The technical assistance should be provided in a form that gives the contractor greater corporate responsibility for assisting HMG in implementing the project. The technical assistance personnel should be counterparty with the line agency officers in the inter-agency Sub-Regional office. AIC should be provided with a long-term seed specialist and a fertilizer distribution specialist to assist in improving performance in and privatizing these two critical areas. Nepalese technical assistance should provide financial management and training at the District level and below in conjunction with the expatriate technical assistance personnel.
7. **Roads**

The new Project should provide for maintenance of the three Project rural roads, including completion by the Department of Roads of the stabilization program and necessary drainage to prevent erosion and ecological damage, pending implementation of the project (proposal with the Asian Development Bank), to finance their conversion to all-weather roads (see Annex 12).

8. **Policy issues**

Several policy issues should be resolved and commitments obtained before the new Project goes forward, as follows:

- USAID should adopt a Mission-wide support strategy for the Project. Under this strategy, USAID and HMG should emphasize support to Rapti development by other USAID-HMG supported projects including the Community Health/Family Planning Project, the Agricultural Research Project and the Irrigation Management Project and the Girls' Access to Education Project. This support will entail more USAID time devoted to coordinating management as well as for implementation management. USAID would also work with other donors to include the Rapti Zone in national programs. For example, USAID should seek to have the World Bank and HMG include Rapti Zone in the Bank project now under consideration for cottage industry development. Similarly, support for the Small Farmer Development Program and for the Production Credit for Rural Women Program should be provided through IFAD, FAO, and UNICEF under the corresponding national level program. (However, should the ADB/N not be able to maintain its regular and SFDP program in the Zone, the Design Team should reexamine this recommendation);

- HMG line agencies should fill regional and District-level positions of importance to the Project;

- In view of the critical role of women in the Zone's agricultural development, agencies should include as high as possible numbers of qualified women, and consider incentives for women in extension posts; and

- The ADB/N and the commercial banks should expand and simplify their lending in the Zone for cereal production, irrigation projects, private sector agricultural input supply, and private and local forestry, tree crops, and pasture improvement projects.
9. **Private Sector Mobilization**

Follow-on project design should consider measures for mobilization of local private sector resources and energies. Among the components of this effort are:

- Policy dialogue, and measure to improve agricultural inputs supply through privatization;
- Encouragement of private sector initiatives on a scale small enough to be meaningful in Rapti Zone;
- Direct support of the private sector as well as traditional government-funded efforts (which are often too heavily subsidized to be sustainable); subsidies should be reduced as quickly as popular perceptions and the market will bear;
- Use of provisions of the Decentralization Act for private sector participation in local development planning at the District Panchayat level and for District planning for private sector development; and
- Strong support by HMG, USAID and AID/W for speedy Asian Development Bank approval of the proposed project to upgrade to all-weather standard the Project roads, completion of which is probably a precondition for significant private sector development in the Hill Districts.

10. **Training**

Training should be used as a policy and management tool, as well as a means of upgrading expertise. US, third-country, and longer term in-country training should be used as an incentive for assignment to and retention in field positions in the Districts, where people are reluctant to go and stay. The training bond, which requires trainees merely to work for the government, should be tightened to require their return to the remote areas of the Project, where they are needed, for a fixed period of time. Training should be also be provided to private entrepreneurs.

11. **Design recommendations**

In designing the new Project the following should be considered (see Annex 25):

- The provision of imported chemical fertilizer to the HMG as a means of ensuring fertilizer supplies and generating local currency required for the program;
- The provisions of food for work programs in food deficit areas through UNWFP as a means of addressing malnutrition and increasing project resources;
The collaboration of Peace Corps in providing advisors at the district level in agriculture, engineering, forestry and natural resources, and planning; and

The design work should also take into account the detailed recommendations given in Annex 2 for each Project sub-component.
ANNEX 1

Statement of Work
ARTICLE III- STATEMENT OF WORK

A. General Responsibilities

The contractor will provide overall direction and coordination of the evaluation including report preparation, as well as for technical expertise in the areas of rural development and of agricultural and natural resource development.

B. Purpose and Scope of the Evaluation

The first five years of implementation witnessed a dynamic learning process in which project components were periodically assessed for their adequacy and validity. At the time of the proposed evaluation, which corresponds to the initial 1985 PACD, a number of the original project components will have met implementation targets, while others are being phased out, expanded, strengthened, or in some way redesigned. Thus, this evaluation will focus on providing the GON and USAID with the means (a) to measure progress and impact to date on a component by component basis, showing whether project outputs have contributed toward meeting project objectives and goals; (b) to assess progress made in addressing those issues raised in the 1983 Special Evaluation which relate to the project's purpose; (c) to assess the soundness and appropriateness of the project extension strategy; and (d) to suggest medium and long-term strategies that will make rural development initiatives in the Rapti Zone responsive to local needs as well as program and policy concerns.

Within this framework the evaluation team will also analyze broad development issues which cross-cut project components. Some questions are:

Is the multi-sectoral or integrated area approach the most effective and sustainable means for promoting development in the Rapti Zone?
Does decentralization of government authority as presently evolved enhance local-level capacity to solve rural development problems and to formulate adaptive development strategies?

Has the long-term institution-building approach at the local-level strengthened District capability to plan and manage resources on a sustainable basis?

Has the project assisted in establishing participatory community involvement, by people directly and through assigned and elected GON officials?

Has the project assisted in promoting a broader distribution of resources among the target population, specifically poor farmers, landless laborers, occupational castes, and women?

The evaluation team will also address questions referring to specific project components. They are as follows:

**Farming Systems:** To what extent have increases in field crop, horticultural and livestock production increased the measurable aspects of the quality of life among participating rural farmers? What is the significance of participating numbers of farmers in terms of the total farm population? Can new initiatives in the Small Farmer Development Program (SFDP), the Cropping Systems Program (CSP), Production Credit for Rural Women (PCRW), and the Household Production Systems Program (HPS) broaden the base for farmer participation and increase agricultural productivity and income? Are these programs replicable?

**Reforestation and Natural Resources:** Is the Rapti project effectively addressing problems of deforestation and environmental degradation? Is the forestry program having an adequate impact on reversing negative trends? Are the community forestry and soil conservation/watershed management programs solving the most critical natural resource problems? Based on experience, what is the necessary level of effort required to achieve adequate impact? Is community-based management an appropriate and sustainable approach in long-term resource conservation efforts?

**Employment and Income Generation:** What has been the impact of the Appropriate Technology Unit (ATU), rural industry and educational programs on off-farm employment and income generation activities? Will new incentives in the SFDP,
PCRW and HPS programs increase household incomes and provide incentives for private sector development? Should the rural industry and educational activities be phased out as planned?

Infrastructure Development: How has the construction of selected rural roads, small rural works, and service centers contributed toward improving the delivery of basic services and promoting socio-economic development within the Zone? Is the current transferring of responsibility of small rural works to the District level an appropriate and sustainable strategy?

Institutional Development: Has implementation based on the coordination of sectoral activities and the use of existing agencies and organizations proved effective? Has the Project Coordinator's Office (PCO) played a key role in supporting and training district personnel and in coordinating project activities? Has technical assistance and training promoted skills development and improved professional and technical capability at the district level? Are district offices now adequately staffed?

C. Team Composition and Responsibilities:

A six-person team composed of four expatriate and two local experts is proposed for this evaluation. All team members should have experience in development and be familiar with rural development issues and problems in developing countries. A knowledge of these issues and problems in Nepal is desirable. They should also be knowledgeable in data gathering and analysis techniques, both of a quantitative and qualitative nature.

The evaluation contractor will provide the Rural Development Specialist/Evaluation Team Leader, the Agricultural/Natural Resources Specialist, and an Evaluation Advisor. The fourth expatriate on the six-person team will be a Development Economist from AID/Washington. Two Nepalese, a Local Institutional Development Specialist and a Rural Works and Infrastructure Development Specialist will be contracted separately by USAID/Nepal. The general responsibilities of each team member will be the following:

Rural Development Specialist (U.S. Contractor): As team leader, he/she will be responsible for coordinating the evaluation, providing guidance to other team members and ensuring that the purpose and scope of the evaluation are achieved within the designated timeframe. The leader will also ensure that the team's findings are accurately
recorded and a evaluation report is submitted in final form to the Mission Director in Nepal prior to his/her departure. As team member, this person will assess the social soundness of the project, focusing on local participation, the allocation of resources, and the distribution of benefits. He/she should have a strong background in social science analysis and be capable of formulating long-term rural development strategies.

Following completion of the evaluation, at the request of AID/W, the team leader may travel to Washington, D.C. for a review and debriefing of the evaluation findings. 1 1/2 days have been allocated for this purpose in this budget.

Agricultural and Natural Resource Specialist (U.S. Contractor): A large portion of the Rapti Project involves agricultural and forestry activities. This team member will assess the technical soundness of the agricultural, livestock, horticulture and irrigation development activities, and the soil conservation water-shed management, and community forestry activities. He/She will assess related monitoring and impact assessment data gathering systems. He/she should be familiar with other integrated area projects and have experience in both upland and lowland agriculture and forestry development projects. See Addendum page 8A

AID/W Participant (USDH): This person will analyze the economic soundness of the project, focusing on employment and income-generating activities in both the agricultural and non-agricultural sectors. He/she will also examine the project's cost effectiveness and overall management capability. This member must be knowledgeable about AID policies and be capable of thoroughly assessing the project development initiatives.

Local Institutional Development Expert (GON Nominee): This member should be familiar with the project and have a sound knowledge of GON Ministries and operations. He/she should also be knowledgeable about rural development and decentralization activities throughout Nepal and be able to assess their importance in the Rapti Zone. This person should be able to evaluate the relevancy and quality of data used by the evaluation team.

Rural Works and Infrastructural Development Specialist (Local Hire): This person should have extensive experience in small and medium rural works construction in Nepal and be capable of assessing the technical quality of infrastructural activities. He/sh should also be competent in management issues and have experience evaluating the social and economic soundness soundness of rural works.
The contractor will also provide the services of (one) evaluation advisor during the last 2 weeks of the evaluation. The evaluation advisor's role is to provide leadership and guidance in the conceptualization and drafting of the evaluation report, since this report must be completed in final in the field prior to the team's departure. The advisor's arrival in either weeks 4 or 5 will depend on the evaluation team's progress in putting together the draft report. (The Mission should advise ANE/PD and the contractor specifically when this evaluation advisor should arrive.) Specifically, the evaluation advisor will work with the team leader to:

- review the team's findings and recommendations on the Rapti project to date;
- review data available in Katmandu on project progress and impact;
- provide leadership and guidance in the conceptualization and drafting of the evaluation report;
- prepare realistic and action-oriented recommendations for USAID, HMG, and AID/W;
- ensure that the final report is of the highest professional quality and is completed in final prior to the team's departure from Nepal.

The evaluation team will also review the recent Smith/Korns study and recommendations (to be provided to team) concerning the quality of data and data collection system in Rapti. The evaluation should comment on the study and based on their evaluation findings, add other recommendations, if necessary.

D. Evaluation Timing and Logistics:

The evaluation will require six weeks and will take place from 1 September through 12 October 1985. Extensive field visits are required in order to assess the project in all its aspects. It is not expected that roads in the hill districts will be open at this time, necessitating trekking by foot and horse. Hence it is imperative that all team members be in excellent physical condition. Logistics are as follows:

Preparatory Period (18-31 August): The two Nepali team members will begin collecting and reviewing background documents and conducting data analyses as needed. They will also contact relevant GON Ministries/Agencies and Donors and arrange appointments for the week of the 1st.
The expatriate members will meet in Washington for 1 1/2 days and talk with ANE Bureau officers and others familiar with the Rapti Project Paper, the 1983 Special Evaluation, the Evaluation Updates, and the Project Extension Paper.

Week 1 (1-7 September): Kathmandu. All team members will meet and begin the formal evaluation process. They will continue reviewing background materials, particularly the Rapti Regional Economic Assessment and other Special Studies relating to the project and the Zone. The team will meet with USAID staff, GON officials, and other donors involved in rural development activities in Nepal. They will also make preparations for the coming field trip.

Weeks 2-4 + (8-26 September): Rapti Zone. Using the PCO in Tulsipur as a base, the team as a group will visit project activities in the Dang District and meet with local officials and leaders, the project contract staff, etc. They will then split into two groups, one covering Salyan and Rukum, the other Pyuthan and Rolpa.

Weeks 4-5 + (27 September-5 October): Kathmandu. Draft preparation and review/comments by the GON, USAID, and contractors. Evaluation advisor will arrive either week 4 or 5 for 2 weeks begin assistance to team in final preparation of evaluation.

Week 6 (6-12 October): The Rural Development Specialist/Team Leader and the Nepali Institutional Specialist will remain to complete the final report with guidance from evaluation advisor.

Following completion of the evaluation, at the request of AID/W, the team leader may travel to Washington, D.C. for a review and debriefing of the evaluation findings. 1 1/2 days have been allocated for this purpose in this budget.

ARTICLE IV REPORTS

The following reports are required:

1. Draft technical reports are to be prepared by each member of the evaluation team and submitted to the team leader at the end of week four of the evaluation.

2. A draft evaluation report is to be prepared by the team leader, in consultation with the evaluation advisor, and with the inputs from each of the team member's technical reports. This report is to be submitted to USAID by the
ANNEX 2

Comprehensive Listing of Recommendations
# ANNEX 2

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The design team for the second phase of the Rapti zone development effort should work very closely with district personnel and farmers in each district in preparing the design. The design should provide for:

-- Effectively coordinating production support services and programs in each District;

-- Strengthening village-level capacity in planning and implementing agricultural development activities based on improved village-level assessment of productive resources and constraints in all relevant sectors; and

-- Effectively linking district-level and village-level planning;

Greater support must be given to extension efforts through:

-- Improved training and involvement of para-professionals and leader farmers in production programs. Agricultural assistants from the local area should be given definite responsibilities and appropriate compensation as important agents in the PPVT, block production, and demonstration programs. Substantial numbers of women must be included, as called for in the original Project design;

-- Improved training of JTs and JTAs, including extension and farmer training methods and farming systems methodologies. The JT/JTAs are essential links in the research/extension process, not only in spreading new technologies but also in evaluating and feeding back farmer response. They must be fully capable of both roles;

-- Improved training in agricultural planning, monitoring and evaluation, drawing on lessons from the FAO/APROSC project (see Annex 28-2);

-- Strengthened support from central and regional directorates and research farms;

-- An increased proportion of women JT/JTAs, essential in reaching the substantial numbers of women farmers;
Strengthened guidance and supervision of extension workers through agriculture graduates and subject matter specialists in each district. A farming systems specialist should be provided through technical assistance; and

Increased coordination of agricultural extension, livestock extension, credit, and input activities through regular meetings at the district and subcenter levels, involving AAs and leader farmers. Planning targets should be set at the subcenter level and focused on the quality of service delivered;

Adaptive on-farm research/extension should be strengthened. USAID's ARP and other relevant projects should provide greater support to efforts in the Rapti Zone and a formal mechanism to link them is required. The Cropping Systems Program should be broadened, through a farming systems approach, to include such areas as livestock, upland crops (including pulses and fodder), horticulture, forestry, cash crops, efficient allocation of labor, and nutrition. The 1983 Special Evaluation's recommendations for research in specific areas should be examined in depth and acted upon as appropriate. These areas included soil fertility, on-farm water management, drought-tolerant crops, intercropping, crop marketing, and new crops;

Feedback mechanisms for the evaluation of technologies should be strengthened. The methodology of the household production systems component, i.e., beginning with close attention to the existing system, shows some promise as one way of improving feedback;

More active and more direct interactions between extension personnel and research workers in nearby areas should be encouraged;

Full use should be made of all stages of the CSP methodology, including initial site descriptions, the detailed PPVT block production plots, and mini-kits, to effectively evaluate a broader range of factors critical to understanding and improving farming systems. JT/JTAs should be guided more closely in their use of PPVT procedures;

Inter-agency coordination should be strengthened through increased support for such coordination at the national and zonal levels and through planning and implementation training sessions for inter-agency groups; and

The horticultural farm in Musikot should play a more significant role in research and extension directed at household vegetable production and consumption. The
vegetable seed production program should be maintained. Adaptive research and extension for tree crop production, e.g., in apples and citrus, should be carried out to support private nurseries and growers.

Recommendations on related components can be found in the annexes on seed production and agricultural inputs (Annex 9), credit (Annex 8), livestock (Annex 5), and irrigation (Annexes 10 and 14).

ANNEX 5--Livestock

- A more focused livestock development program, with clear objectives and targets should be developed, District by District, and linked with village planning for land use, crop production, horticulture and forestry programs;

- Renewed efforts through extension, training, demonstrations, trials and village planning should be programmed to help farmers improve and increase pasture and fodder production;

- Service center capability for animal health and extension work should be further expanded at the Ilaka level. Permanent housing and posting of staff should be a part of Project strategy;

- As lack of trained technical manpower is a national problem, higher level and mid-level manpower training should be continued as before in India, Philippines and other Third Countries as well as in the Institute of Applied Animal Science (IAAS), Nepal. In-service training for the staff at the district/regional and higher level should be continuous in the areas of technical, administrative, national policy and project planning, programming, implementing, monitoring and evaluation support;

- Assistants (LAs) and progressive farmers at the Panchayat level should have continuous training in management, fodder production, drenching, and in animal health. Various extension tools should be used in the livestock development program. Demonstrations, competitions, audio-visual and other materials should be utilized;

- Farming systems research should be carried out on fodder production systems and potential; and

- Private enterprise approaches should be developed for:

  -- The supply of vaccines and other medical supplies for animal health care treatment;

  -- The supply of improved cross breeds to farmers (including buffaloes, cattle, goats, and sheep); and

  -- The supply of quality fodder and grass seed.
ANNEX 6—Forestry

Community forestry activities should be expanded, as the absorbative capacity of the agencies (DOF and DSCWM) and the motivation of the village continues to grow. The rate of expansion which is practicable, manageable and sustainable and also consonant with the strategy of involving the villages and doing the work well, needs further analysis. A level of effort sufficient to have major impact on the problem of preserving and managing natural resources in the Zone will, however, require an expansion of perhaps six times current annual plantings. This expansion, however must take into account existing capability-levels and effective improvement of these;

The community forest program should emphasize extension public education, and working with forest user group in resource planning and management at the district, village, and, in some cases, ward levels. Capacity in planning and carrying out natural resource management should be strengthened and based on improved village-level assessment of land use and land capability patterns. In this regard, information from the Land Resources Mapping Project should be used more fully. The quality of community forestry staff, especially at the ranger and assistant ranger levels must be further improved through training and incentives centers for quality performance;

Continued emphasis is needed on restoration of degraded areas. Increased emphasis should be given to improving production, especially of fodder and multipurpose species, on sites with higher yield potential. DOF efforts could concentrate best on the latter, on protection of river-belt areas, and on effective forest/pasture management of the deforested hill areas. More serious restoration problems are best given to the DSCWM. The efforts of these two departments should be closely coordinated. The adaptive field trials called for in the PP should be carried out;

Monitoring and supervision of all phases of forest activities should be strengthened; Inter-agency coordination should be strengthened through increased support for such coordination at the national and zonal levels and through planning and implementation training services for inter-agency groups. Particular attention should be given to close coordination of forestry and livestock/fodder production activities;
Private sector involvement, including private plantings, leased forests, and private nurseries, should be encouraged and administrative obstacles to such involvement diminished. Deforestation, land degradation, and forest management problems in the Dang Valley area should be addressed by DOF plantation and management as well as community approaches;

Women should be included in forestry development activities and training programs;

The experience of the many and varied community forest projects in Nepal, including USAID’s RCUP, should be drawn upon; and

Peace Corps support for the forestry component should be continued. The design of the second phase of the Project should consider the provisions of food-for-work programs in forestry activities through UNWFP. (See Annex 25.)

ANNEX 7—Soil Conservation

Surveys of critically impacted areas should be undertaken and requirements for stream/river training should be assessed for every District. Based upon such surveys and requirements, HMG should include soil conservation measures in District Panchayat planning;

The program in Rapti Zone should be strengthened under the follow-on Project by providing support to DSCWM in establishing additional nurseries and offices in Salyan and Pyuthan within the next year or two, and in Rukum and Rolpa as soon as possible thereafter;

Training should be provided to village leaders in soil conservation as well as reforestation and pasture management;

District Panchayats should ensure coordination among district forestry, agriculture, livestock and soil conservation officers and should initiate pilot measures to encourage village land use planning. Local development plans should take advantage of such land use planning; and

Soil conservation and river training works should be based upon local participation to the maximum extent. Technical assistance, supply of gabion wire, and food for work programs should be provided to support popular participation.
ANNEX 8—Agricultural Credit/Small Farmer Development Program (SFDP)

- The agricultural credit system in the Zone should be designed to facilitate farmer access to credit in the villages, with increased priority to loans for cereal, pulse, fodder and horticultural production;

- The ADB/N's regular and SFDP programs should be continued, but they should be financed, or at least managed, by the national programs and national donors. If close USAID/HMG/donor coordination cannot be achieved and the expansion of volume, geographical outreach, and sub-sectoral breath of agricultural credit and SFDP activity necessary to achieve the purposes of the follow-on project cannot be obtained without direct project funding, this recommendation should be reconsidered; and

- ADB/N should hire women staff and, particularly, Women Group Organizers (GOs) under the SFDP. Wives of some of the present GOs might be recruited and couples recruited in the future. The more realistically modest educational requirements for GOs should avoid replicating the difficulties experienced in the Production Credit for Rural Women (PCRW) program. Finally, serious consideration should be given to genuine integration of the PCRW and SFDP programs (see Annex 11).

ANNEX 9—Agricultural Inputs

- The agricultural supply system in the Zone should be restructured, with major privatization of seed production/distribution and fertilizer distribution;

- The policies and administrative procedures of the AIC should be reviewed and modified where necessary to provide strong incentives to the private sector to participate in the supply of farm inputs to Rapti farmers;

- A program should be drawn up to expand the number of dealers/traders serving the villages of the area;

- District programs should be drawn up by AIC in consultation with ADOs and farmer representatives for local private production of quality seed in sufficient quantities to meet District requirements;

- The extension service should improve training for its agents in plant protection measures and the safe use of plant protection chemicals; and
o District and Village Panchayats should include in their planning and development programming measures to improve the market accessibility of outlying villages. A high priority should be the improvement of mule trails in which the district assists the villages with necessary bridges and civil engineering on difficult passages.

ANNEX 10—Medium Irrigation

The USAID/Nepal Irrigation Management project (0153) beginning this year is USAID’s nationwide approach to the institutional problems described above. This is entirely appropriate. Mission management should take energetic steps to ensure that the necessary share of attention and resources from that project is directed to the irrigation management needs of the Rapti Zone.

As far as the Rapti Project per se is concerned:

o In order to minimize any disruptive implications of suspending construction activity, the team recommends that the study should be completed before the onset of the construction season in February 1986. All work on and expenditures under the medium irrigation component should be suspended immediately;

o The Mission should promptly contract, under Project funding, a thoroughly independent, multi-disciplinary assessment team to study the five approved projects, in order to review social, economic, technical, financial, and legal aspects of project completion, termination, or modification; No further funds should be obligated for these projects pending the outcome of the study;

o Any recommended continuation of these medium irrigation projects whose implementation runs beyond FY 1986 should be transferred with available funds to the new bilateral Irrigation Management Project, which is offering institution-building to DIHM, for monitoring and implementation; and

o Any further project-funded irrigation activity should be limited to such DTO-managed minor irrigation projects as can mobilize prior and full community support, e.g., CARE and other SFDP-funded initiatives and loan-funded tubewell or other ADB-sponsored programs. The groundwater potential of the Dang and Deokhuri valleys should be inventoried and developed, but under some project other than this one.
ANNEX 11—Production Credit for Rural Women/Household Production Systems

- Ideally, the PCRW program should be combined with the SFDP (see Annex 8) in order to dramatically increase its scope and impact; and

- The HPS component, if it proves itself in its first year (by reaching predetermined levels of enterprise creation at a predetermined unit cost), should be continued under the Local Development Fund of the follow-on project.

ANNEX 12—Roads

The follow-on Project should make modest provision for maintenance of the three Project roads, including necessary biological stabilization and drainage works to prevent erosion and ecological damage of these incomplete roads, pending approval an anticipated Asian Development Bank Project to upgrade them to all-weather roads.

ANNEX 13—Road Stabilization

- Continued support for this activity should be provided as a matter of priority. Pending initiation of construction work to upgrade the roads to all-weather standard, funding should be provided to enable the DOR to install structural works at critically impacted points as part of the road maintenance program;

- A detailed stabilization program should be formulated for the period of the Seventh Five-Year Plan. The Department of Roads, with the help of USAID, the DOF and the DSCWM, should prepare detailed work plans for 1985/86 and 1986/87;

- Two additional nurseries should be established in 1985/86 and in 1986/87 to permit expansion of the revegetation program;

- A qualified forester (Class II gazetted) should be hired to work with the Department of Roads in Ghorahi on the program. Close coordination should be developed by DOR with Zonal and District staff of the DOF and DSCWM; and

- Local people should participate actively in developing appropriate land-use plans for forestry, pasture lands and degraded lands in the roads corridors, in close cooperation with Ministry of Forest. Extension should be part of the biological control program.
ANNEX 14 -- Small Rural Works

- The small rural works programs should be recast and included as part of a considerably broader local development program implemented from the District. The expanded local development program should include the successful School Improvement Program previously carried out through District and local education committees. It should also include other development activities of importance to villages (and selected, implemented and managed by them), including production-oriented activities for agriculture, livestock, forestry (i.e., land use planning, pasture improvement, fodder, tree production, village crop production campaigns, community forestry development) and activities to upgrade human skills, including training and literacy programs;

- Full responsibility for this program should devolve to the Districts. PCO should withdraw from activity/design/approval by no later than the end of 1986. Specific programs should be developed and carried out as soon as possible to strengthen all DTOs sufficiently to manage these programs;

- A study should be carried out to define more clearly the potential for minor irrigation and measures to support most efficiently and effectively village efforts to make better use of existing irrigation and additional irrigation possibilities, particularly in the hill areas; and

- A study should be made of the potential and need for improved market access in the hill areas by the improvement of rural trails, district by district.

ANNEX 15 -- Office and Other Buildings

Office buildings, while easy for USAID to supply, should be provided to a maximum extent in the Zone by other means. Thus, office buildings for which Project funds already are committed could be completed with such funds. The HMG can itself build office buildings. The HMG should as frequently as possible arrange for needed buildings to be constructed by the private sector, with commercial bank financing, for lease back to the government.

ANNEX 16 -- Appropriate Technology Unit (ATU)

- The success of the ATU, although limited, suggests that appropriate technology dissemination in Nepal should be considered as a national program. Recommendations for strengthening the ATU program are given in Jantzen's report; and

1Jantzen, Rural Areas of Nepal.
The ATU subsidy and operating costs should not be continued under the follow-on project. Rather, the ATU should receive three years’ terminal funding (on a substantially sliding scale) during FY 1986. During that period, the ATU should seek to institutionalize itself by a combination of foreign and domestic nationwide support and lowering its use of subsidies to sustainable levels.

ANNEX 17--Cottage Industry

- HMG and USAID should strongly support World Bank approval of an extension of its Cottage and Small Industry Project to encompass at least Dang, Rolpa, Salyan and Pyuthan Districts; and
- No further support should be programmed through the Project for CIDB/Emporium activities.

ANNEX 18--Service Centers

- Continued support should be provided for existing service centers and a plan for staffing and operating each drawn up. Expenditures on buildings should be scaled down through the use of local materials and appropriate designs. The construction of the five service center complexes should be completed;
- In designing a new Project for a second phase Rapti Zone Development Effort, the role of service centers should be carefully reviewed and planned with emphasis on delivery of effective support services for agricultural and livestock production, forestry/natural resource management, and local development projects (including village level planning and implementation). Each Service Center should have an implementation committee to which assistance should be provided in planning, programming, implementing, monitoring and evaluation of programs.
- Planning for service centers should take into account their use as market centers (e.g., as sites for periodic markets) and the need for improved trails linking villages and hamlets to them. However, improvements are needed for the organization, planning and support of their field personnel. Adequate provision was not made for timely agricultural credit and the supply of agricultural and livestock inputs (See Annexes 4, 5, 8, and 9). Forestry and Soil Conservation services were not to be provided in effective conjunction with agricultural and livestock services. Service Centers should be used to promote marketing and off-farm employment, as was suggested in the 1983 Special Evaluation.
ANNEX 19--Education

- As future activities under the recommended new Project should concentrate on local development programs, food and agricultural production and forestry and natural resources management, the education component should not be included in on-going activities; and

- The serious financial management problems which plagued the education program have slowed overall Rapti Zone Project implementation. HMG and USAID should study ways to improve the flow of funds to Districts for program implementation and district accounting.

ANNEX 20--Health and Family Planning

- The local development program should provide funds to support village-level initiatives in health and family planning, including functional literacy training, sanitation, drinking water systems and nutrition. With respect to the latter, pulse crops to complement cereal protein and household horticulture should be emphasized, as noted in Annexes 4 and 25.

ANNEX 21--Project Coordinator's Office

- Recommendations for Project Management are given in Annex 24;

- Measures are needed to accelerate the strengthening of DTOs; a target date should be set for accomplishing this transfer of authority to the Districts. The PCO should set as a deadline the end of 1986 for the transfer of responsibilities for rural works program design approval to Districts;

- The PCO should expand training for Districts in planning and management skills and in technical skills;

- The PCO should intensify its evaluation program (for example, evaluations of the effectiveness of extension services out of District sub-centers or of the agricultural supply system in delivery of improved seeds); and

- The staff of PCO should be reduced—and District staffs correspondingly strengthened—as functions are transferred to Districts.
ANNEX 22--Local Development Officer

- Support for local development projects should be continued under a second phase Project. Technical support and assistance to Village Panchayats and local user committees for such local development projects will be an important, continuing role for the LDO and the District Panchayat Office.

ANNEX 23--Technical Assistance

- As noted in Annex 24, the Evaluation Team recommends that expatriate technical assistance should be provided in a form that gives the contractor greater corporate responsibility for assisting HMG in implementing the project.

ANNEX 24--Management Issues

1. Narrowing/Focusing

The major reason for the donor shift against IRD projects was the conclusion that they are too complex to administer. This may not be axiomatic, but there is a certain amount of truth to it; the management task for the Rapti project was multiplied, and management energies diffused, by the very variety of sectors and Ministries demanding attention. Accordingly, the Team has recommended that the second phase of the proposed 15 to 20-year effort by HMG and USAID for the development of Rapti Zone take the form of a new local development project much more focused on agriculture (including livestock) and forestry/natural resource management, rather than an extension of the existing IRD project. Other activities designed into the old project—health, education, family planning, cottage industries, credit, "medium" irrigation, and road construction—that can be better managed either through other, nationwide USAID projects or through programs of other donors—should be so managed. This should leave a manageable unit for a follow-on project.

This recommended approach does impose a new task for project management and for Mission strategy: to ensure that Rapti Zone gets at least its fair share of other Mission and donor project action. Although critical, the net burden of this intra-Mission and other donor coordination would be far less than heretofore; and that burden is more widely shared throughout the Mission. The project management burden would be similarly shared, through the donor community.
2. **Policies, dollars, and rupees**

Most of the costs of the Rapti Project have been local costs. Many of the problems of financial management under the project---ranging from timing of releases to the thorny issue of not paying for "tea and snacks" that consumed all project managers for weeks in 1985---have to do with local currency management. At the same time, large visible chunks of foreign exchange are highly valued in Nepal. In terms of policy dialogue, the decentralization plan that the HMG has taken to heart and is implementing would be a policy reform triumph in most AID-assisted countries, but there are a great many more policies whose amendment is integral to the success of even the more narrowly focused follow-on project. These include privatization of agricultural inputs and especially fertilizer; filling of authorized but vacant field positions, more serious address to women in development, etc. Some of these policy objectives will be difficult to achieve.

The idea here is to explore the possibility of making the majority of annual project costs that represent local currency expenditures available early in the fiscal year in the form of fertilizer imports for the Rapti Zone. The local currency counterpart of those early dollars would be programmed as Project rupees are now, but perhaps with some greater flexibility because they would be HMG's rupees, although they would be programmed jointly with USAID. It is not possible to develop this idea fully here; our aim is merely to recommend that it be explored in the follow-up project design as a means to increase policy dialogue accomplishments while decreasing financial management problems.

3. **Level of government**

Like other IRD projects in Nepal, the focus of design and implementation are at the Zonal level of government. Under the Decentralization plan, however, authority and responsibility are being devolved rapidly to the District level of government; there are five districts in Rapti Zone. However, the Zone in general plays no particular role in the scheme except as a jurisdiction for the Project Coordinator's Office (PCO). The intermediate unit of government with increasing responsibility for coordination over the Seventh Plan is supposed to be the Region. The Mid-Western Development Region, of which Rapti is only one of three Zones, is comprised of a total of 14 districts. Thus far, this Regional level of government has had virtually nothing to do with the Rapti Zone project operations heretofore, despite its formal charge for the development of the area including the project.
The team recommends that the Regional level be involved closely in the new project; that the PCO be de-emphasized as a management unit in the follow-on project; and that an interagency sub-regional office, with a direct link to the nascent regional level of government in Surkhet (where additional authority to promote local cooperation among reluctant line agency staff reside), will help coordinate and support the Project at the District level. Aspects of PCO project implementation will devolve to the district level directly as fast as the Districts are capable of handling them. This should further improve project management.

4. Contracting

The primary Project contractor, PADCO, Inc., did not have corporate responsibility for the Project; rather it provided individuals or contractually housed other individuals found by the Mission. This is apparently the way the Project was designed, but it frustrates the direct-hire staff-saving purpose of technical assistance contracting.

Any expatriate technical assistance required in the follow-on project should be provided in the form of a corporate or institutional contract that gives clear responsibility to the contractor for assisting HMG in carrying out the project, leaving for Mission personnel more of a management and less of an implementation role.

5. Mission Staffing

The Rural Development Office, which manages the Rapti project and only the Rapti project, is staffed by seven direct-hire (DH) personnel--two US and five Nepali--in addition to an IDI, for whom an additional slot is open, and a variety of project contract-funded staff. All seven (eventually eight) direct-hire staff are funded from the Operating Expenses account, despite the fact that since they all work on a single project they may be eligible to be paid out of program funds. It is possible that fewer than three USDH and five FNDH personnel might be required to manage a more focused follow-on project. But however many they are, they should be charged to the project. Project funding and OYB should be increased by AID/Washington accordingly and without cavil, while OE funds are in such short supply relative to program. The OE savings should be substantial.

The second phase of the 15 to 25-year proposed effort for the development of Rapti Zone should take the form of a new local development project much more focused on agriculture (including livestock) and forestry/natural resource management. Other activities designed into the old project—that can be better managed either through other, nationwide USAID projects or through programs of other donors—should be so managed;
The possibility should be explored in the follow-up Project design of making the majority of annual project costs that represent local currency expenditures available early in the Nepali fiscal year in the form of fertilizer imports for the Rapti Zone as a means to increase policy dialogue accomplishments while decreasing financial management problems. Some of the policies whose amendment is integral to the success of the follow-on project include privatization of agricultural inputs, especially fertilizer; filling of authorized but vacant field positions; and address to women in development;

The Regional level should be involved closely in the project. The PCO should be de-emphasized as a management unit and an interagency sub-regional office with a direct link to the regional level in Surkhet should help coordinate and support the Project at the District level;

Expatriate technical assistance should be provided in the form of a corporate or institutional contract that gives clear responsibility to the contractor for assisting HMG in carrying out the project, leaving Mission personnel with more of a management and less of an implementation role; and

The services of direct-hire (DH) personnel who work only on the Project should be charged to the Project rather than funded from the Operating Expenses account.

ANNEX 25--Nutrition/PL 480 Integration/Peace Corps Coordination

Rather than begin a PL 480 Title II program in Nepal, USAID should explore direct cooperation with WFP on projects for which a food aid component is concluded to be appropriate. This will both help WFP use their resources in more developmentally sound activities, while allowing USAID to enjoy and take advantage of additional food resources in the proper circumstances, without all the bureaucratic strain of a bilateral effort;

Monetization of food aid holds little promise in Nepal. It may in fact further depress prices paid for local commodities, as there is not a government mechanism capable of handling the food in such a way as to preclude disincentive effects;
Consideration should be given to legalizing the defacto paying of porters in kind for carrying the food aid to remote project areas. This will help defer a major financial burden on HMG which is charged with the cost of inland transportation and handling. Use of porters increases employment and is preferable for that reason to high cost air transportation; 2 and

Payment in kind for porterage to food-deficit project areas, a practice now in use by HMG's National Food Corporation, should help decrease dangers of diversion of food across the Indian border rather than to the Project area. Payment or partial payment in food for labor costs of rural works should extend the Project's ability to fill these highly valued small productive rural works at an expanded level at less cost, and might usefully be extended to project building construction. Conducting the program through UNWFP rather than directly should minimize the incremental management and monitoring burden placed on the Mission. The nutritional benefits of the food provided should be supplemented by those of the drinking water systems constructed, given the relationship between diarrhea disease and the quantity (let alone quality) of water available. And finally the coordinated approach should combine AID prescriptions for increased donor coordination with the development use of PL 480 in the most meaningful way.

ANNEX 26--Women in Development

Certainly existing methods of filling jobs with women have failed. However, in the productive as well as social sectors, women workers are needed to reach women, and these women need to be reached to achieve project purposes. Alternative methods to reach these women should be explored. Recruiting and training couples for social and technical outreach work like SFDP, agricultural extension or forestry, or training and paying salary supplements to wives of existing workers are examples of methods that should be tried.

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Another suggestion for increasing women's local development involvement concerns the decentralization program at the District level. Each District Panchayat has a plan formulation committee, composed of five sub-committees: agriculture and irrigation; works and maintenance; industry, forestry, and soil conservation; health and population; and education. The chairman of the District Working Committee of the Nepal Women's Organization is an ex-officio member of the agriculture and health sub-committees, but this is not terribly effective. MPLD might require that a significant proportion of each committee membership be female. Also, MPLD might require that a sixth, Women's Affairs Committee be added to the decision-making apparatus as well, to reflect the actual productive importance of women in the decentralized local economies. If the recently maintained plan to assign some Women Development Officers at the District level on a pilot basis proves effective, perhaps the idea might usefully be extended to Rapti Zone. They could play a critical role in promoting women's interests and participation in the conduct of the full panoply of development programs in the District.

Whatever the organizational changes, it is clear that female technical staffing ratios will have to be improved at the District level if the follow-on project is to achieve its objective. This will require considerable policy dialogue and monitoring HMG should appoint a WDO for each District to work with the LDO, sectoral agencies, and the woman's committee to work towards full participation of women in Rapti Zone development efforts.

ANNEX 29--1983 Special Evaluation Issues

1. Ecological situation

The program to improve the ecological situation should proceed with more forestry and related conservation/restoration activities on an expanded scale, building on the increased capacity of the program since 1983. To maximize effectiveness, the Project should provide training in community forestry and the DOF should insist that its present ranger staff made community forestry a priority activity or be removed from their posts. The rangers must, in effect, become CFAs.

DSCWM activities must be significantly strengthened in restoration of eroded areas not presently suitable for forest production. In addition, the measures for environmental protection to mitigate the adverse impact of 200 kms of District roads cut into the Middle Hills from Tulsipur to Salyan, from Ghorahi to Pyuthan and from Chakchake to Rolpa (Libang) should be continued and accelerated.
2. Institutional Trends
   
a. IRD strategies
   
   District planning for food and agricultural development and for forestry and natural resource management needs to be focused much more on particular District constraints, opportunities and potentials, with clearly defined objectives and measures for monitoring progress—-as noted in Section IV of the main report.
   
   b. Local private enterprise
   
   The proposed new Project should consider measures for private sector mobilization (See Section IV, Main Report).
   
   c. HMG manpower resources
   
   Continued emphasis on filling posts, training and staff development, and improved work planning and organization by and with Districts is necessary.
   
3. Household production system
   
   The next phase of Rapti Zone development should take advantage of the improved base for development work in agriculture (including livestock) and forestry and emphasize these as the major productive components in a new Project (see main report).
   
4. Incentives
   
   The Evaluation Team fully supports the two recommendations made by the 1983 Special Evaluation Team:
   
   o Districts should program more resources for intra-District and inter-District trail improvements; and
   
   o Districts should plan for local market organization and development;
   
   The Team also recommends:
   
   o Strengthening the farm credit system by improving its outreach to farmers in their villages (see Annex 8); and
   
   o Privatization of seed production/distribution of chemical fertilizers and other farm inputs (see Annex 9).
   
   The issues of subsidies for farm inputs and of incentive prices for farm products are national in scope, requiring policy dialogue.
The design of a new project for the second phase of Rapti Zone development will, however, provide HMG and USAID the opportunity to review in depth the incentive environment for rural development in the Zone. Ways to encourage and support private sector development need further study and consideration, and should be examined in designing the proposed second-phase project.

5. Population

USAID should adopt a broad Mission support strategy for the Project and its second phase. The Evaluation Team observed that no MCH programs were underway in the Zone and recommends that the USAID project for family planning and health services emphasize activities in the Zone in any MCH development it supports. Little has been done to promote sanitation at the community level. This should be included through support for local development by the PCO's Technical Support Unit and the small rural works program. The Planning and Monitoring Unit of PCO should carry out a study of what can be (or is being) done under the existing Project and under a second phase.
ANNEX 3

Partial List of Persons Met

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# ANNEX 3

## Partial List of Persons Met

### Dang District

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<thead>
<tr>
<th>Name</th>
<th>Position</th>
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</tr>
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<tbody>
<tr>
<td>Mahesh K. Shresthe</td>
<td>Manager, ATU</td>
<td>Tulsipur</td>
</tr>
<tr>
<td>Rabindra Rajbhandary</td>
<td>Zonal Manager</td>
<td>Tulsipur</td>
</tr>
<tr>
<td>Awadha Kishor Deo</td>
<td>Agricultural Development Officer</td>
<td>Ghorahi</td>
</tr>
<tr>
<td>Ishwor B. Singh</td>
<td>Zonal Manager</td>
<td>AIC</td>
</tr>
<tr>
<td>Raghunath Bhandari</td>
<td>Chief District Officer</td>
<td>Ghorahi</td>
</tr>
<tr>
<td>Krishna P. Poudyal</td>
<td>Planning Officer, Local Development</td>
<td>Ghorahi</td>
</tr>
<tr>
<td>Lok R. Chaudhary</td>
<td>JTA</td>
<td>DOA</td>
</tr>
<tr>
<td>Daman K. Shrestha</td>
<td>Forest Ranger</td>
<td>DOF</td>
</tr>
<tr>
<td>Birendra K. Singh</td>
<td>Acting District Education Officer</td>
<td>Ghorahi</td>
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<tr>
<td>Mark A. Conley</td>
<td>Natural Resources Specialist</td>
<td>DoF</td>
</tr>
<tr>
<td>B. Acharya</td>
<td>Assistant Engineer</td>
<td>DIHM</td>
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<tr>
<td>Kailash B. Shrestha</td>
<td>Divisional Engineer</td>
<td>DIHN</td>
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<tr>
<td>Shree Ram P. Neupane</td>
<td>Assistant Livestock Development Officer</td>
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<tr>
<td>Khim B. Shah</td>
<td>District Panchayat Chairman</td>
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</tr>
<tr>
<td>Suresh P. Acharya</td>
<td>Assistant Engineer</td>
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<td>Radha P. Shresta</td>
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<tr>
<td>Creighton Peet</td>
<td>Chief of Party, PADCO</td>
<td>PCO</td>
</tr>
<tr>
<td>Bishnu R. Kafie</td>
<td>Cropping System Agronomist</td>
<td>PADCO</td>
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<td>Herbert Rice</td>
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<tr>
<td>Heera R. Regmi</td>
<td>Research &amp; Evaluation Officer</td>
<td>PCO</td>
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<tr>
<td>Khem R. Nepal</td>
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<td>Sudarshan K. C.</td>
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<tr>
<td>Manjusha Shah</td>
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<tr>
<td>Raj K. Shrestha</td>
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### Rolpa District

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<tr>
<td>Dambar D. Pandey</td>
<td>Acting Sub-Branch Manager</td>
<td>Libang</td>
</tr>
<tr>
<td>Ramesh L. Karna</td>
<td>Acting Ag. Development Officer</td>
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</tr>
<tr>
<td>Sanu Babu Khatri</td>
<td>Chief District Officer</td>
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</tr>
<tr>
<td>Madhur P. Shrestha</td>
<td>Cottate Industry Officer</td>
<td>DLDL</td>
</tr>
<tr>
<td>Krishna P. Shankhi</td>
<td>Veterinary Doctor</td>
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</tr>
<tr>
<td>Bir S. Thapa</td>
<td>Sub-Branch Manager</td>
<td>DFO</td>
</tr>
<tr>
<td>Krishna K. Pandey</td>
<td>Forest Ranger</td>
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</tr>
<tr>
<td>Shiva N. Yadav</td>
<td>Forest Ranger</td>
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*Note: DOA = District Officer Agriculture, DOF = District Officer Forestry, AIC = Agriculture Information Center, PADCO = Project Assistance Development Coordinating Officer, JT = Joint Task Force, ZCO = Zonal Coordinating Officer, PCO = Project Coordinating Officer, DFO = District Forest Officer, DCVI = Development Coordination Village Official, SFDP = Special Forest Development Program.*
### Pyuthan District

- Yam B. Thapa
- Khem R. Pandit
- Bhakti B. Poudel
- Veena Siddhartha
- Begum Bahadur K.C.
- Putal K.C.
- Nareshwar Subedi
- Ram B. Rana
- Iswari P. Pandit
- Kul R. Regmi
- Suresh K. Sribastab
- Darshananda Upadhya
- Khim B. Shahi

### Salyan District

- Gopal Thapa
- Bauye Lal Shah
- Laxman P. Upadhya
- Ganga P. Luitel
- James Roshetko (Jim)
- Rajendra B. K.C.
- Surya Dev Sah
- Yogendra Raut
- Tika R. Joshi
- Chuman S. Basnet
- Surya B. Rawal
- Om P. Bhattachan
- Katherine John Ston
- Kamal K. Jha
- Pokhar Singh D.C.
- Samshcer B. Cahlaune
- Maheswar Bhandari
- Kul Bahadur Khatri
- Kand B. Hamal
- Mohan B. Shahi
- Tej B. Dangi
- Tika Ram Rokka
- Tatna Lal bhandari
- Syani Lal
- Dilli Upadhya
- Resham B. Shakya
- Harka B. Hamal

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<td>Peace Corps Volunteer</td>
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<td>Headmaster, Bagdula H. School</td>
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Devi
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<tr>
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<td>Puskar Acharya</td>
<td>JTA</td>
<td>DLDAG Sulichaur</td>
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<tr>
<td>Durga B. Khadka</td>
<td>Water Turbine Owner, Farmer</td>
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<td>Him R. Dangi</td>
<td>Pradhan Pancha</td>
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<td>Krishna B. Nepali</td>
<td>JTA</td>
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<tr>
<td>Bishwa N. Yogi</td>
<td>Acting Project Chief</td>
<td>SFDP Jedbang</td>
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<tr>
<td>Khima Kumari Raut</td>
<td>Post-Trainee, Cottage Industry</td>
<td>Masina</td>
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### Rukum District

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<td>Dil B. Chand</td>
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<tr>
<td>Chiranjibi M.S. Basnet</td>
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<tr>
<td>Mohan B. Shrestha</td>
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<td>Hom J. Malla</td>
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<td>Birenda L. Shrestha</td>
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<tr>
<td>Carl A. Dutto</td>
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<td>Benjamin A. Stoner</td>
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<tr>
<td>Shaubhagya L. Shrestha</td>
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<td>Gerry Hawkes</td>
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<td>Raj B. Shrestha</td>
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68 Dev
HMG Offices, Kathmandu (continued)

Manmohan D. Joshi
Mohan P. Wagley
Manjural Haque
Uttar B. Shrestha
Prabesh M. Singh
Gokul R. Amatya
Bihar K. Shrestha
Govinda D. Pandey
Nanda P. Upadhyay
Keshav Shrestha
D.N. Koirala
K.M. Singh
Bhubaneshwar Khatri
Chandani Joshi

Nancy Axinn
Prakash B. Shah

Director General
Soil Scientist
Chief Conservator
Deputy Chief Conservator
Planning Officer
Deputy Director General
Joint Secretary
Executive Director
Branch Chief
Planning Chief
Chief SFDF Division
Chief ATU
Controller General
Chief, Women Development Section,
Advisor
Pedologist, Integrated Survey Section

DSCWM
DSCWM
DOF
DOF
DLDAH
DIHM
NPC
CIDB
CIDB
DOA
ADB/N
ADB/N
MOF
MPLD

UNICEF

Kathmandu
ANNEX 4

Agriculture
ANNEX 4

Agriculture

A. Summary

The project did not achieve its rather unrealistic agricultural production objectives. This was due principally to poor inter-agency coordination, to improved technologies being less available or acceptable to farmers than anticipated, and to considerably less than planned for strengthening of extension services. Future efforts should provide greater support to extension through more effective staffing, improved training and support at all levels: District Agricultural Development Officers (DADOs), Junior Technicians (JTs), Junior Technical Assistants (JTAs), local-level para-professionals, and leader farmers. Adaptive on-farm research/extension should be strengthened and broadened to include livestock, horticultural crops and upland crops, in addition to wheat, maize, and rice. Inter-agency, inter-project and intra-project coordination should be strengthened.

B. Purpose

The purpose of the agriculture sub-component has been to increase the quantity and quality of food production and consumption, to increase employment opportunities and labor productivity in agriculture, and to improve "locally generated demand for and control of" new agricultural inputs and technologies.1

The agriculture sub-component includes agricultural extension and training activities, (including a cropping systems program) and horticultural activities, largely through a government farm in Rukum District. Together with agricultural inputs, livestock, irrigation, and credit (including, for example, the Small Farmer Development Program--SFDP), it forms the basis of the farming systems cluster called for in the original Project Paper (PP).

C. Background

1. Recommendations of the Feasibility Study

The Feasibility Study of Rapti Zone IRDP recommended specific activities in three program areas:

A crop development program, with emphasis on improved varieties, improved crop husbandry practices (including plant protection measures and improved use of manures), seed production, on-farm storage, on-farm trials (as well as mini-kit distribution), and agricultural tools;

A horticultural program which emphasized household and commercial fruit production, kitchen gardens, vegetable seed production, ginger production, and supporting services; and

An extension program emphasizing increased staff levels and quality, and increased use of local para-professionals and "leader farmers".

2. Project Paper Proposal

The Project Paper maintained the emphasis on food crop production, horticulture, and extension, and specified that USAID would provide US $2.5 million for agricultural extension and training and US $0.5 million for horticulture. (Altogether, the farming systems cluster would include USAID contributions of US $9 million, 34 percent of total project costs.)

The project's log frame specified the following outputs:

- An increase in field crop production of 27 percent, including increases in cereal crop production of 35 percent for Dang, 19 percent for the low hills, and 17 percent for the high hills; and
- The establishment of 1,000 hectares of orchards.

The PP elsewhere specified that:

- Vegetable "kitchen gardens" would be established in 45 percent of the households;
- 150,000 farmers ("both men and women") would receive "instruction" in new technologies;
- The ratio of extension personnel to farm households would increase from 1:2,500 to 1:1,500; and
- Each of the 185 village panchayats would have five active trained "Leader Farmers" (3 men, 2 women).²

²PP, pp. 7-8.
The Project Paper also provided for 576 person months of academic and 47.5 person months of non-academic participant training, 6,664 person days of in-service training at the JT and JTA level, and 40,900 person days of para-professional training for agricultural assistants and leader farmers. The latter was an important component. The Project planned to recruit fairly large numbers of local people of both sexes and different socioeconomic backgrounds to serve as local extension agents and para-professionals in order to reduce the social distance normally operative and thereby increase credibility and communication.\(^3\)

An important assumption in the logframe was that the ongoing HMG/USAID seed production and integrated cereals production (ICP) projects and an upcoming hill agricultural systems project would support the project with relevant research. There was only "minimal" need for the project to depend on "technologies which are not already present in Rapti Zone or well known to HMG technical and field staff."\(^4\)

3. Project Agreement

The Project Agreement stipulated that "AID will provide $2.526 million for the upgrading and, where necessary, the construction" of Department of Agriculture (DOA) district headquarters and "the creation of up to five service centers in each district."\(^5\)

The agreement also stipulated, as had been planned in the PP, that the extension service was to be expanded and supported by the recruitment and training of "at least five "Leader Farmers" from each of the panchayats in the Zone."\(^6\) AID would also provide support to the Agricultural Training Center at Nepalgunj. An unspecified number of "Subject Matter Specialists" would be assigned to "strengthen dissemination of research findings and carrying out of adaptive research in the Zone."\(^7\) Training materials were included in the budget.

The project agreement also specified that AID would provide $0.5 million through the DOA to support the upgrading of the Musikot Horticultural Farm and expansion of vegetable seed production and dissemination. In addition, fruit and orchards and nurseries were to be established and potato seed and storage activities were included.

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\(^3\)PP, Annex J: Social Soundness Analysis, p. 7.

\(^4\)PP, Annex L, pp. 5-6.

\(^5\)Project Grant Agreement, Annex 1.

\(^6\)PP, p. 8.

\(^7\)Ibid.
4. Mid-Term Evaluation (MTE)

The 1983 Special MTE concluded that, although the ICP and the related cropping systems research program in the Ministry of Agriculture were "important steps in the right direction" the lack of significant attention to livestock and forestry components in these activities diminished the relevance and applicability of this research in improving local production systems. The MTE recommended that much more attention be focused on the household production system as a complex interrelationship of highly diversified agricultural, livestock, and non-farm activities within innumerable micro-environments. Related to the agricultural sub-component, three fundamental changes in project direction, as the MTE team perceived it, were recommended:

- "A greater concentration of resources and professional time on developing and introducing a more integrated household production - environmental development strategy";
- Close collaboration of the agriculture, livestock, and forestry staff, in working out detailed district panchayat forest, fodder, and fruit tree program strategies; and
- A greatly increased effort on agricultural research for the Hills.

The MTE identified "need for farming systems research as well as for seeds, inputs, and technologies that combine with livestock rearing. This research must be decentralized in keeping with the range of ecological as well as social conditions." The MTE recommended several specified research thrusts to learn more about:

- The cultivation of upland crops which can tolerate reduced moisture, e.g. millet and barley;
- The impact of intercropping on yields;
- Alternative means of soil fertility management;
- On-farm water management;
- New crops, such as rape and peanuts; and
- Crop marketing.

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9Ibid. p. 32.

The MTE further recommended that cash crops and agro-processing based on local resources be expanded, for example:

- Cultivation of fruit trees, with some processing or drying;
- Production of medicinal herbs; and
- More efficient milling of grain and oil seeds.

The MTE noted inadequate manpower levels for extension efforts, but did not evaluate the quality and/or utilization of staff or of local leader farmers.

Other MTE recommendation concerned agricultural inputs, which are discussed in Annex 9.

5. Project Extension Paper

The Project Extension Paper (PEP) reiterated a focus on extension and horticulture, but did not respond to the MTE's concern over the relevance of present research. The PEP set the following targets for a three-year period:

- Field trials and production demonstrations in 35 village panchayats;
- Introduction of improved cropping and farming systems for approximately 25,000 small farmers;
- 300 person-months of in-service training for extension personnel;
- Production and distribution of 12,000 vegetable seed packets;
- Fruit tree propagation in twelve village panchayats; and
- Five nutrition training programs for each district.

In addition, a household production systems program was to include among its agricultural emphases, seed production and distribution in cooperation with women's groups, fruit protection (sic) and marketing, vegetable garden development, and training programs for farmers.

An expatriate agricultural advisor was to work with several technical line agencies in planning and implementing production and training programs in horticulture, food, and cash crops.
D. Description of Activities and Program Carried Out

1. Organization and Management

Agricultural extension activities are managed in each district by the Department of Agriculture through a District Agricultural Development Officer (DADO). Each district also has between 5 and 8 service centers staffed with at least one Junior Technician (JT) and one Junior Technical Assistant (JTA). Training is carried out at the district and service center levels and has begun this year at the Nepalganj Agricultural Training Center, which serves a wider area than just the Rapti Zone. The Horticulture Farm at Musikot in Rukum District is administered by the DOA’s Horticultural Division.

2. Inputs

Altogether, USAID has expended Rs 7.96 million on agriculture (plus approximately Rs 1 million for buildings), 6.3 percent of total Project expenditures. (See Table 4-1.)

Of the amount expended on agriculture, 11.7 percent (Rs 930 thousand) has been expended on the Horticulture Farm in Rukum and less than 1.5 percent (Rs 115 thousand) on the training center at Nepalganj. The remaining Rs 6.9 million was expended on agricultural extension activities.

Technical assistance was provided through a former Peace Corps Volunteer (PCV), who was replaced this year by a former DADO from a Project district.

3. Outputs

a. Field Crop Production

There is no indication that production increased to anywhere near the output levels called for in the PP. Reliable agricultural production data is not available from any source, but nationally-compiled statistics indicate that:

- Wheat production in the Zone has increased dramatically, due largely to increased area under production and somewhat to increased yields;
- Rice production has dropped, with yields stable; and
- Maize production has increased, with yields lower than pre-Project levels.
### Table 4-1: USAID Expenditures for Agriculture (Rs '000)

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</tr>
<tr>
<td>Horticulture</td>
<td>0</td>
<td>120</td>
<td>189</td>
<td>232</td>
<td>389</td>
<td>930</td>
</tr>
<tr>
<td>Total</td>
<td>320</td>
<td>1,931</td>
<td>1,934</td>
<td>1,583</td>
<td>2,183</td>
<td>7,916</td>
</tr>
</tbody>
</table>

Source: USAID
b. Horticulture

According to data from the district ADOs, the area in fruit orchards has increased by 504 hectares over the five years of the project. However, this data is calculated from numbers of seedlings distributed, which generally meet targets set and often with uncanny precision. The DOA supports no fruit tree nurseries in any panchayats. Many fruit trees distributed come from a private citrus nursery in Salyan (reportedly about 20,000 ungrafted seedlings/year), a private apple nursery in Rukum (3 to 5 thousand grafted seedlings/year), and from nurseries outside the Zone. Survival rates for fruit tree plantings are unknown, but reportedly not very high. There is unmet demand for fruit trees.

Vegetable seed packet distribution has increased, from 300 packets in 1980/81 to over 12,000 in 1984/85, reaching at most 8 percent (and more likely much fewer) of the Zone's households, not 45 percent, as specified in the PP. No project-sponsored nutrition training programs have taken place.

c. Extension and Training

Extension staff at the JT and JTA levels has increased from 64 in 1979/80 to 101 in 1984/85. Most of this increase has been during the past two years. This is approximately one such staff for every 1,564 households. The ratio in Dan is somewhat more favorable than in hill districts. The quality of extension service is not high due to a variety of factors.

Less than one-fifth (18.9 percent) of the PP's projected 6664 person-days of in-service training at the JT/JTA level were provided. Last year, less than 30 person months of in-service training were provided for JTs and JTAs, one-tenth of what the PEP had targeted for three years.

There are no reliable records for numbers of farmers reached, except the estimates for numbers of leader farmers and agricultural assistants (AAs) trained--1,349 and 80, respectively. The agricultural assistants each received 30 days of training at Nepalganj or related centers outside the project area. Training at the AA level was provided at 15.9 percent of the PP's target of 16,990. Training for farmer leaders was provided at 16.9 percent of the PP's target of 23,910 person days.

There are now 230 village panchayats in the project area, from 180 of which 1,349 leader farmers have received training. Assuming that even as many as one-third of these are double counted, an average of more than five leader farmers from each of the panchayats has been trained. The three-day training sessions, however, were not followed up sufficiently to create five active leader farmers in each panchayat; nor was the 40 percent ratio of women leader farmers achieved.
Field trials (PPVTs) were carried out in 25 panchayats, almost three-quarters of the PEP target of 35 with the planned-for for 3-year extension. Block production (farmer-operated demonstration) programs were carried out in 15 of these panchayats last year and involved 817 farmers.

E. Problems and Constraints

Agricultural extension staff and farmers identified a number of problems and constraints, most of which were confirmed by the team's observations.

Timely availability of quality inputs, especially seeds and fertilizer, was the most frequently noted problem. This has also adversely affected the PPVT and block production programs. Seed storage is a problem which is being met in part through subsidized metal storage bins. A serious problem with onion storage at the farm level has not yet been solved.

Staffing is another area of concern. The level of training of some JTs is limited to one year of technical training. In-service training was not thought practical enough by some and training materials were felt to be inadequate. Turnover and motivation are also problems. For example, the acting DADO in one district noted that, although nine of the ten approved JT positions are filled, one JT is on study leave in India, one has just returned from B.Sc. training and is "not willing to work", one has been gone without leave for six months, and two are working in Dang instead of the district to which they were assigned.

DADOs report that because agricultural assistants (AAs) are paid only Rs 50 per month, they are not able to use them effectively in extension efforts. Some DADOs also expressed difficulty in supervising, evaluating, and appropriately motivating JTs and JTAs. Some JTs noted that one of their main problems was gaining the farmers' confidence.

Late budget releases and late approval of programs were also of concern to extension staff.

Pest and disease problems include blast, bacterial leaf blight, stem borer, and unidentified caterpillars in rice; smut and army worms in wheat and corn; and aphids in mustard. White grubs were a reported problem. In some areas, monkeys, jackals, and dumsi were felt to be far greater problems than insect pests. Stored grain pests are also a problem. Many JTs and JTAs felt inadequately prepared to identify pests and diseases.

Certain items of equipment, such as moisture meters, seed treatment drums, and sprayers, are not available at all subcenters. On the other hand, one subcenter had a soil test kit which the JT did not know how to use.
Land tenure/tenancy problems are still unresolved, especially in Dang where there is great inequity in land tenure.

F. Measurement of Progress

Korns and Smith’s report on monitoring and impact assessment proposed monitoring the last three of the four stages of the cropping systems program of the project as the most useful way of monitoring project impact. Measurement of the most important of these—spontaneous adoption of new practices by farmers outside the PPVT and block production program—however, is not possible from presently-available data. The closest available indicators are the aggregate grain production statistics we discussed in the section on outputs. The data available from the ADOs is not useful, given the methods by which these estimates are derived. Quantity indicators for the second stage (PPVTs) and third stage (block production trials) have been given above in the section on outputs.

Quality indicators—average gains in yields by crop, land type, and year for the two stages must be interpreted cautiously. PPVT plots are managed by JTs and JTAs with some training, often minimal hands-on practice, and little, if any, direct supervision. Examination of some of the raw data, both from JTs’ notebooks and the PCO office, revealed some irregularities which are not always apparent from the compiled reports. Nonetheless, some increases in yield are apparent for one to several varieties of the crops tested (including rice, maize, wheat, and mustard) under 10 different land categories based on access to irrigation and production potential. Overall average increases recorded on PPVT plots were 80 percent for maize and wheat, 41 percent for mustard, and 90 percent for rice. These averages mask considerable variability, not only among sites and varieties, but also among plots of a single variety within a given site.

G. Findings

1. Contribution to Project Objective

The impact of the agricultural sub-component of the project has been disappointing. The PPVT program has successfully demonstrated that yield increases are possible, especially on irrigated lowland. However, significant adoption of HYVs and/or intensified multiple cropping has occurred only in a few pockets where extension activity is strong in encouraging block production and where other factors are also favorable. The most important of these appear to be input availability (mainly water and fertilizers) and livestock balance with respect to

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fodder/forage resources. There has been no significant achievement of 
zone-wide yield increases in upland farming systems, despite promising 
results in maize PPVTs.

Local capacity to make effective use of agricultural services has 
not been significantly strengthened except, again, in a few pocket 
areas. These areas do not generally include more than the two or three 
wards of a given panchayat which are most easily accessible for the JT 
or JTA.

2. Effectiveness and Appropriateness

a. Research

One of the major limitations on the project's 
effectiveness, as was emphasized in the MTE, has been the research upon 
which the Rapti project activities must draw. A review of activities 
at the two research sites most accessible to the project is 
illustrative. The research program at the research farm and training 
center at Nepalganj is carrying out some research appropriate for 
small, limited-resource farmers; however, no hill agriculture research 
is possible and results are applicable mainly in the Deokhuri and 
possibly Dang Valleys. Some of their research which seems appropriate 
and useful includes:

- Research on pigeon pea intercropping;
- Evaluation of direct-seeded (broadcast) rice varieties for 
  lowland areas without irrigation;
- Assessment of yield performance with light use of inputs and 
  no insecticides, as these are often not available;
- Assessment of yield performance of different varieties 
  without any fertilizer.

The research trials carried out by the Cropping Systems Program 
(CSP) at Chaurjahari (Rukum district) are, in some ways not as 
appropriate as they might be. Research is limited to three types of 
land:

- Lowland, with full irrigation;
- Lowland, with limited irrigation; i.e. with sufficient water 
  for winter crops but not for transplanted rice; and
- Upland, i.e., flat land with no irrigation.

No research is undertaken on higher upland plots nor on the many 
important subsidiary field crops.
Research does measure earliness of maturity and both straw and grain production, all factors of concern to farmers in the area. Chemical control of insects and diseases and application of fertilizers are carried out on all on-farm trials, in contrast to some of the trials in Nepalganj. Only on researcher-managed field trials is fairly complete data collected; however, data on cultural practices, e.g., weeding, is incomplete. There is no complete data collection on farmer-managed field trials. There is little research on soil fertility management and only limited attention to non-chemical fertilizers, despite their widespread importance in traditional cropping systems.

b. Extension

Extension efforts are far too limited to be truly effective. There are too few JTs and JTAs and the latter, especially, do not have sufficient training. Sufficient hands-on training and on-going, timely supervision is particularly limited. Given the focus of existing research, extension efforts have concentrated mainly on lowland areas and have not emphasized improved management practices. JTs and JTAs do not generally have significant contact with farmers more than a short distance from the ward in which they are living.

The effectiveness of the extension staff's efforts is also impaired by frequent turnover, absence from post at critical times during cropping cycles, and a lack of understanding of Project objectives, which differ from DOA targets.

Given the above, the CSP's Pre-Production Verification Trail (PPVT) program, although limited to very small pockets in 25 Panchayats, seems reasonably well-controlled although the quality and timeliness of JT/farmer interaction is sometimes deficient. The quality of sampling procedures is variable.

The block production trials in some panchayats are not adequate in scope. For example, in one panchayat, the JT and JTA appear to be working closely with only 15 farmers, including 7 PPVT farmers. Full utilization is not being made of the data collection formats for these trials in monitoring and guiding the efforts of extension workers.

The DOA's demonstration program is carried out with intense focus on achieving target levels, even if this means demonstrating a variety which farmers are already using or carrying out many demonstrations within a very small area. They are often based on the kind of seed available from AIC rather than on the varieties which the CSP has identified as most appropriate.
c. **Horticulture**

Considerable useful research at the Horticultural Farm in Musikot is being carried out on such aspects as vegetable varieties, effects of N-P-K levels and spacing on yield, onion bulb storage, etc. The farm is not serving adequately as a model farm. One important area of neglect is soil fertility management. The farm does use compost but is unable to supply its own needs completely and buys from area farmers. The quality of the farm's compost preparation process is poor. The staff is quite responsive to farm-level problems as these arise in the seed multiplication program and appears to work well with JT's in the area.

d. **Training**

Training has been not been carried out at needed levels, despite heavy emphasis on training--particularly at the para-professional level--in the PP. Training at the JT/JTA level lacks significant emphasis on hands-on practice and on-site follow-up. Training at the district level and farmer training is overly didactic.

During the past year, a much-needed course in extension methodology, using group interaction and discussion techniques and practice, was carried out. The agricultural training center at Nepalganj was, according to staff there, designed and built with no on-site consultation. There is no running water, despite the construction of modern lavatories. Audio-visual equipment is lacking. Although there are some obvious advantages to locating a training center adjacent to a research station, the center duplicates many of the run-down facilities of the nearby Panchayat Training Center, which is not used significantly by the project. It has audio-visual equipment, a library with out-of-date references and texts, a poorly-maintained shop, quarters and other buildings, and 15 hectares of land.

3. **Efficiency**

Calculating the cost per unit of various Project outputs is very misleading due to undisaggregated cost figures and the very recent start-up or increase in various activities. Nevertheless, costs per unit have been calculated by dividing a number of different quantitative indicators into the amounts expended by USAID. The Project trained no more than 1400 farmer leaders and AAs at the district level at an average cost of Rs 1022 per person-day. The vegetable seed farm distributed 28,670 seed packets at an average cost of Rs 32 per packet.

4. **Sustainability and Impact on Local Capacity**

The Project has not successfully recruited and trained local men and women as extension para-professionals or as leader farmers, as called for in the Project design. The concept of ward-level committees or action groups, proposed in the feasibility study, was carried out only informally in a very few locations. Some success has been made in
hiring JTAs from within the districts they are posted. In general, however, the Project has not emphasized sufficiently those aspects in the Project design most essential for sustainable efforts through increased local involvement and capacity in agricultural development.

5. **Manageability**

The Project has suffered from a lack of sufficient coordination of programs. The service center model of mutually reinforcing agricultural production support services has not been made effective. Target pockets where PPVTs or block production programs are being carried out are often not supported effectively with inputs and/or credit. Targets are not set at the district level and do not generally reflect resource availability and local problems. JT/JTAs are not receiving sufficient guidance, supervision, and technical backstopping in carrying out programs.

6. **Private Enterprise Development**

Private vegetable seed production has grown over the life of the Project. There is dissatisfaction and misunderstanding among some farmers regarding the price and quota system for contracting vegetable seed by the AIC. There is significant potential for increased private production and/or distribution of seed and fertilizer (e.g., there is a demonstration Kettering nitrogen fertilizer plant in Tulsipur), as is discussed in Annex 9.

Virtually all fruit propagation is run by a very few private nurserymen who could benefit significantly from improved technology.

H. **Conclusions**

The Project did not achieve its agricultural production objectives. This is due principally to three factors:

- The availability of improved technologies readily acceptable to farmers was overestimated in the Project design. The time needed for micro-level, on-farm adaptive research on those technologies which do exist or are being developed was not taken into account;

- The planned extension program, with heavy emphasis on local para-professionals, was not supported to the degree necessary and planned for in the Project design; and

- Coordination was weak or ineffective between the agricultural production programs and necessary supporting services, especially agricultural inputs (see Annex 9), and related programs, e.g., livestock, forestry, and irrigation.
Technologies have been developed and proven successful, where inputs are available, for certain farming systems/agro-ecosystems, but for many areas, acceptable technologies have not been developed. The research programs upon which the Project has been able to draw are most appropriate for irrigated land production where agricultural inputs are regularly available. Valley floors, alluvial fans, and lower footslopes—where irrigation is most prevalent—make up 20.6 percent of the cultivated area and 5.4 percent of the total Project area. Level terraces, where partial irrigation is often—but not always—possible make up 15.0 percent and "Terai wet lands" 7.1 percent of the cultivated area. Unirrigated "Terai dry lands" and sloping terraces make up 3.8 and 53.5 percent of the cultivated area, respectively. Grazing land (11.9 percent of the total project area) makes up the rest of the area's agricultural land, which comprises 38.4 percent of the total Project area. Aside from maize, no promising technological packages have been adequately tested for the unirrigated upland conditions, which make up over half of the cultivated land.

Technologies which have proven successful have not often spread effectively beyond limited pockets where extension staff are well-motivated and concentrated. Additional technologies have been tested and identified as promising only this past year, for example, Bindeswari as a variety of rice for broadcast planting where irrigation is not sufficient for transplanted rice. Some acceptable technologies, for example, for wheat production, have been introduced and have spread without direct assistance from the Project.

The PP assumption that existing research technologies would be sufficient ignored both the complexity of the Zone's farming systems and the constraints affecting farmer decisions to adopt or not adopt a given technology. For example, technical packages which have been developed do not adequately consider the importance of livestock in the traditional farming systems which are to be improved. In addition, the hillside agriculture research project upon which the Rapti Project was also to draw was never implemented. The recently begun AID farming systems project (Agricultural Research Production) may help correct this lack. No effective follow-up on the MTE's recommendations on the research issue has been carried out.

Despite the importance of the agricultural production component to the project's success, coordination with resources in the AID Agricultural Office was minimal. Support by the HMG Department of Agriculture was also minimal, in part due to very real manpower constraints.

The PPVTs of the CSP provides an excellent framework for enlisting extension technicians in the on-farm adaptive research trial process. However, more importance must be given to monitoring cultural practices, which the present framework of variables upon which data is collected does not cover effectively. Even within the present framework, insufficient emphasis is given to closely measuring farmers' practices (FP) as well as recommended practices (RP). The considerable
variation in farmer’s yields, both with recommended practices and traditional practices, indicates that factors are at play which are not adequately considered. For example, little effective attention is given to nutrient cycling; plant spacing and its effect on grain yield, straw yield, and weed population; the use of weeds as ground cover and fodder; green manuring and many other factors. Even among progressive farmers, who have adopted some varieties and practices, adoption of new technologies is not complete. Some parts of the farmer’s land are reserved for traditional varieties.

Yield potential or Marginal Benefit Cost Ratio (MBC) are the factors by which research and the PPVTs are measuring successful varieties. These are not the only factors which concern the farmer. The PPVT system is not always used or able to be used maximally to identify and respond effectively to other factors.

The training and extension programs reflect these weaknesses in research direction.

Although extension manpower has increased over the life of the project, it is still too limited in terms of numbers of JTs, JTAs, and especially AAs and in the quality of their preparation. Similarly, real, effective contact with farmers, particularly women farmers, is inadequate. The use of para-professionals and involvement of leader farmers in production programs is extremely limited. On the side of higher-level technical support, subject matter specialists are not available to extension personnel at the district-level or below.

There is excessive emphasis on targets and too little emphasis on effectively timing extension activities and farm visits to focus on key points in the cropping/farming system cycles. Targets do not emphasize these crucial process-level functions of extension.

There is no effective coordination of agricultural extension with forestry and livestock, for example, with respect to forage crops in rotations. Expatriate technical assistance has not pressed strongly enough for this. District-wide planning capability is weak. The valuable land use information from the Land Resource Mapping Project (LRMP) is not being used.

The horticultural program is focused mainly on problems of vegetable seed production. Little progress or programmatic effort is being made in improving vegetable production and consumption by the Project area’s households.

Project-supported activities in fruit production are insignificant and largely limited to distributing seedlings produced elsewhere. There are, however, some privately operated nurseries which could use technical assistance in improving the quality and quantity of their output. There is considerable interest in and unmet demand for fruit and nut crops, which extensionists are not adequately trained to support.
I. **Recommendations**

- The design team for the second phase of the Rapti zone development effort should work very closely with district personnel and farmers in each district in preparing the design. The design should provide for:
  - Effectively coordinating production support services and programs in each District;
  - Strengthening village-level capacity in planning and implementing agricultural development activities based on improved village-level assessment of productive resources and constraints in all relevant sectors; and
  - Effectively linking district-level and village-level planning;

- Greater support must be given to extension efforts through:
  - Improved training and involvement of para-professionals and leader farmers in production programs. Agricultural assistants from the local area should be given definite responsibilities and appropriate compensation as important agents in the PPVT, block production, and demonstration programs. Substantial numbers of women must be included, as called for in the original Project design;
  - Improved training of JTs and JTAs, including extension and farmer training methods and farming systems methodologies. The JT/JTAs are essential links in the research/extension process, not only in spreading new technologies but also in evaluating and feeding back farmer response. They must be fully capable of both roles;
  - Improved training in agricultural planning, monitoring and evaluation, drawing on lessons from the FAO/APROSC project (see Annex 28-2);
  - Strengthened support from central and regional directorates and research farms;
  - An increased proportion of women JT/JTAs, essential in reaching the substantial numbers of women farmers;
-- Strengthened guidance and supervision of extension workers through agriculture graduates and subject matter specialists in each district. A farming systems specialist should be provided through technical assistance; and

-- Increased coordination of agricultural extension, livestock extension, credit, and input activities through regular meetings at the district and subcenter levels, involving AAs and leader farmers. Planning targets should be set at the subcenter level and focused on the quality of service delivered;

- Adaptive on-farm research/extension should be strengthened. USAID's ARP and other relevant projects should provide greater support to efforts in the Rapti Zone and a formal mechanism to link them is required. The Cropping Systems Program should be broadened, through a farming systems approach, to include such areas as livestock, upland crops (including pulses and fodder), horticulture, forestry, cash crops, efficient allocation of labor, and nutrition. The 1983 Special Evaluation's recommendations for research in specific areas should be examined in depth and acted upon as appropriate. These areas included soil fertility, on-farm water management, drought-tolerant crops, intercropping, crop marketing, and new crops;

- Feedback mechanisms for the evaluation of technologies should be strengthened. The methodology of the household production systems component, i.e., beginning with close attention to the existing system, shows some promise as one way of improving feedback;

- More active and more direct interactions between extension personnel and research workers in nearby areas should be encouraged;

- Full use should be made of all stages of the CSP methodology, including initial site descriptions, the detailed PPVT block production plots, and mini-kits, to effectively evaluate a broader range of factors critical to understanding and improving farming systems. JT/JTAs should be guided more closely in their use of PPVT procedures;

- Inter-agency coordination should be strengthened through increased support for such coordination at the national and zonal levels and through planning and implementation training sessions for inter-agency groups; and
The horticultural farm in Musikot should play a more significant role in research and extension directed at household vegetable production and consumption. The vegetable seed production program should be maintained. Adaptive research and extension for tree crop production, e.g., in apples and citrus, should be carried out to support private nurseries and growers.

Recommendations on related components can be found in the annexes on seed production and agricultural inputs (Annex 9), credit (Annex 8), livestock (Annex 5), and irrigation (Annexes 10 and 14).
ANNEX 5

Livestock
A. Summary

Overall, results in improving annual husbandry and livestock production were not achieved. In 1984/85, only about 10 percent of the animal population in the Zone received veterinary services. There was no apparent coordination at the local level with agricultural or forestry programs. The critical problems of fodder production and over-grazing were not addressed. It is unlikely that the target for reducing mortality rates by 5 percent was achieved, and even more unlikely that the unrealistic targets for production increases of 25 to 30 percent were realized. Some underlying assumptions did not materialize (e.g., an Asian Development Bank livestock program). Project inputs amounted to about 40 percent of those planned.

The Project realized considerable progress in expansion of livestock extension and veterinary services, particularly in the past two years. The number of animals provided veterinary care in 1984/85 was ten times greater than in 1980/81 (but still only a fraction of the total animal population). Although limited in number, the distribution of improved stock increased. Greater emphasis should be given to training staff and paraprofessionals, integrating fodder programs with agriculture and forestry, and supporting intensive extension services as the principal means for improving livestock productivity and output in the Rapti Zone.

B. Purpose

The purpose of the livestock component was to improve livestock production through improved breeding stock, health care, credit and extension services.

The PP included this activity with the program component for farming systems, noting that improvements for the household economic unit in the Hills would require improvements in the varying subsistence strategies which allow Hill families to survive. These include field crop production, livestock husbandry, local and short and long-term migration for wage labor, and cottage industries.

The project purpose set forth in the PP was to increase income and production levels of families in the Rapti Zone and improve local demand for and control of national level delivery systems for improved agriculture, which includes livestock.
C. **Background**

The Feasibility Study of Rapti Zone Integrated Rural Development Project identified several constraints to livestock production in the Zone. These included poor quality livestock, inadequate pasture and fodder supply, inadequate health care and feeding of animals and inadequate technical advice to farmers on animal husbandry practices. To increase animal production and improve animal health in the Zone, livestock breeding, pasture and fodder improvement, and animal health improvement programs were envisioned, supported by effective livestock extension, training programs for participating farmers, and suitable marketing channels.

The livestock component of the Rapti project was designed under the PP's assumption that a livestock sector program supported by the Asian Development Bank would be providing important inputs in the Rapti Zone. However, the ADB program was largely limited to a quarantine effort in Deokhuri Valley in Dang, neighboring the Indian border. As a result, the focus of the livestock program under Rapti IRD was on the strengthening of facilities in two Hill Districts not covered under the ADB supported project. It also provided for sub-district level services in all districts to provide benefits in health care, improved breeding and stock, credit and extension services. The ProAg provided: a total of US$ 1.478 million (US$ 1.071 million from AID and US$ 0.407 million from HMG/N):

- for the establishment of District and Service Center offices/animal health centers of the Department of Livestock Development and Animal Health (DLDAH). These centers will emphasize improved animal health, improved animal feed, and animal product marketing where appropriate. A breeding program for cattle and buffalo, sheep, goats, and poultry is included in the budget.\(^1\)

The PP estimated the following outputs by the end of project:

- A five percent decrease in the adult mortality rate of cattle; and

- A five percent decrease in lambing and kidding mortality rates.\(^2\)

The PP elsewhere stated that "an increase in milk, manure, meat and wool production by 25-30 percent by buffalo, cows, sheep and goats in the Zone will add an additional net present worth of $845,000".\(^3\)

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\(^1\)HMG and USA, "Project Grant Agreement...", 1980, Annex 1, p. 4.

\(^2\)PP, Annex C (Rogbrane), P. 3.

\(^3\)PP, p.7.
Training targets for the 5-year period were mentioned as follows:

- 30 person-months (p-m) of third country training;
- 24 p-m of training in India;
- 3,041 person-days (p-d) of local in-service training; and
- 2,350 p-d of local paraprofessional training.4

The 1983 Special Evaluation (MTE) recommended stepping up animal husbandry services, "but only as part of an integrated strategy that includes fodder production and environmental protection".5

D. Description of Activities and Programs Carried Out

1. Organization and management

The program was managed by the DLDAH through its District-level offices/veterinary hospitals.

2. Inputs

Total expenditures were Rs 7.509 million (USAID expenditures Rs 5.350 million and HMG expenditures of Rs 2.159 million; see Table 5-1). The dollar equivalent of total expenditures of Rs 7.5 million is approximately $0.5 million (based on an exchange rate of $1.00 = Rs 15). The total amount expended by USAID in construction of buildings (completed and on-going) was Rs 1.09 million (US$ 0.07 million). Land was provided by the HMG.

3. Outputs

a. Treatment, vaccinations and parasite control

The Feasibility Study of the Rapti IRD noted a high incidence of disease among the animal population, causing death and/or decreased productivity. The PP estimated the outputs by the end of project to be a five percent decrease in adult mortality rate of cattle and five percent decrease in lambing and kidding mortality. Mortality rates, however, were never been measured. The PP does not specifically indicate the targets for treatment, vaccination and parasite control, which are the only available indicators related to animal health. The number of animals treated increased from 6,926 to 96,081 between 1979/80 and 1984/85 (2041/42). During 1979/80, only Dang had any health service delivery. In 1984/85 (2041/42), the number of animals

5MTE, p.5.
NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION

Table 5-1: Project Budget and Expenditures for the Livestock Component, 1980/81 - 1984/85

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<th>Year</th>
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\(^a\)Total expenditures by District through August 1985, were in the following proportions: Dang, 24.8 percent; Pyuthan, 16.1 percent; Rolpa, 18.6 percent; Rukum, 19.8 percent; and Salyan, 20.7 percent.

vaccinated in the Zone increased to 50,114 as compared to 5,746 in 1979/80 (2036/37) when animals were vaccinated in Dang only. In 1979/80 (2036/37), a parasite control program did not exist even in Dang. In 1984/85 (2041/42), 151,511 animals were drenched/dipped for parasites in the Zone (see Tables 5-2, 5-3 and 5-4).

The 1982/83 larger animal livestock population (cows, buffaloes, draft animals, and small animals--goats, sheep and pigs) in the Zone was estimated at 1.087 million and poultry at 0.646 million. Of the total animal population in 1984/85 (2041/42), 96,081 (8.8%), 50,114 (4.6%), and 151,511 (10.6%) animals were treated, vaccinated and drenched/dipped against parasites respectively. There is, however, no reliable way of determining to what extent these services contributed to a decrease of five percent in the adult mortality rate of cattle, or to a five percent decrease in lambing and kidding mortality.

b. Stock Improvement

The PP does not mention the number of improved stock to be distributed. According to the feasibility study of the Rapti IRD (based on both pure and cross-bred animals), 35 bulls, 155 buffalo bulls, 367 rams, and 359 buck goats were to be distributed. Through mid 1985, 38 bulls, 89 buffalo bulls, 119 rams, and 102 buck goats (see Table 5-5) were distributed. The mortality rate among these animals was not more than 10 percent on the average. Very few bulls were at the stage of servicing when distributed. Farmers were very satisfied with the buffalo bulls. Jamunapari bucks were received well by farmers but survived better only at lower elevations. The new rams helped increase wool production. During the Project, 362 piglets and 28,538 chicks (see Table 5-6) were distributed. Mortality for chicks was more than 50 percent. Hatching eggs were distributed in 2038/39 (1981/82), but this program was discontinued due to breakage problems.

c. Pasture and fodder programs

The PP did not mention a target for pasture and fodder programs. Distribution of 56,857 fodder tree seedlings and 1,259 kg of grass seed and improvement of 3½ hectares of pasture land was carried out by the Project (see Tables 5-7, 5-8 and 5-9). Interviews with farmers and veterinary staff and spot-checking by Team members indicate a survival rate of only about 25 percent for fodder tree seedlings. Grass seed was distributed free as a demonstration. Pasture management was not effective as farmers did not control grazing.

---

6PADCO, Rapti Zone Regional Assessment, 1985.
### Table 5-2: Numbers of Animals Treated by District and Year

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>6,926</td>
<td>7,917</td>
<td>5,492</td>
<td>19,158</td>
<td>27,620</td>
<td>39,065</td>
<td>99,251</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>0</td>
<td>0</td>
<td>1,231</td>
<td>7,189</td>
<td>13,205</td>
<td>13,979</td>
<td>35,604</td>
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<tr>
<td>Rolpa</td>
<td>0</td>
<td>2,283</td>
<td>4,374</td>
<td>10,899</td>
<td>17,503</td>
<td>13,644</td>
<td>48,705</td>
</tr>
<tr>
<td>Rukum</td>
<td>0</td>
<td>3,001</td>
<td>8,168</td>
<td>5,839</td>
<td>7,735</td>
<td>14,265</td>
<td>39,006</td>
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<tr>
<td>Salyan</td>
<td>0</td>
<td>0</td>
<td>553</td>
<td>8,840</td>
<td>13,400</td>
<td>15,128</td>
<td>42,895</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,926</strong></td>
<td><strong>13,201</strong></td>
<td><strong>19,818</strong></td>
<td><strong>51,925</strong></td>
<td><strong>79,463</strong></td>
<td><strong>96,081</strong></td>
<td><strong>265,466</strong></td>
</tr>
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</table>

### Table 5-3: Numbers of Animals Vaccinated by District and Year

<table>
<thead>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>5,746</td>
<td>5,046</td>
<td>3,624</td>
<td>5,938</td>
<td>20,000</td>
<td>15,755</td>
<td>50,363</td>
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<tr>
<td>Pyuthan</td>
<td>0</td>
<td>0</td>
<td>1,538</td>
<td>1,783</td>
<td>6,895</td>
<td>11,279</td>
<td>21,495</td>
</tr>
<tr>
<td>Rolpa</td>
<td>0</td>
<td>0</td>
<td>1,171</td>
<td>2,102</td>
<td>4,092</td>
<td>7,759</td>
<td>15,124</td>
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<tr>
<td>Rukum</td>
<td>0</td>
<td>0</td>
<td>3,061</td>
<td>12,002</td>
<td>6,695</td>
<td>8,429</td>
<td>30,187</td>
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<tr>
<td>Salyan</td>
<td>0</td>
<td>0</td>
<td>1.600</td>
<td>1.512</td>
<td>6,192</td>
<td>6,892</td>
<td>16,196</td>
</tr>
<tr>
<td>Total</td>
<td>5,746</td>
<td>5,046</td>
<td>10,994</td>
<td>23,337</td>
<td>43,874</td>
<td>50,114</td>
<td>133,365</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>District</th>
<th>036/37</th>
<th>037/38</th>
<th>038/39</th>
<th>039/40</th>
<th>040/41</th>
<th>041/42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>0</td>
<td>3,704</td>
<td>6,359</td>
<td>16,521</td>
<td>27,698</td>
<td>39,977</td>
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<tr>
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<td>0</td>
<td>1,360</td>
<td>7,582</td>
<td>9,999</td>
<td>20,456</td>
<td>24,807</td>
</tr>
<tr>
<td>Rolpa</td>
<td>0</td>
<td>1,238</td>
<td>4,724</td>
<td>4,299</td>
<td>16,241</td>
<td>27,211</td>
</tr>
<tr>
<td>Rukum</td>
<td>0</td>
<td>0</td>
<td>7,841</td>
<td>9,339</td>
<td>7,242</td>
<td>23,860</td>
</tr>
<tr>
<td>Salyan</td>
<td>0</td>
<td>717</td>
<td>4,302</td>
<td>10,693</td>
<td>24,576</td>
<td>35,656</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>7,019</td>
<td>30,808</td>
<td>50,851</td>
<td>96,213</td>
<td>151,511</td>
</tr>
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</table>

Table 5-5: Numbers of Improved Breeding Stock Distributed by District and Year

<table>
<thead>
<tr>
<th>Year</th>
<th>B</th>
<th>BB</th>
<th>BU</th>
<th>R</th>
<th>Total Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>037-38</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>038-39</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>24</td>
</tr>
<tr>
<td>039-40</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>040-41</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>041-42</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>19</td>
</tr>
<tr>
<td>042-43</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>043-44</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>044-45</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>045-46</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>

B = Bulls
BB = Buffalo Bulls
BU = Bucks
R = Rams

**NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION**

Table 5-6: Numbers of Pigs and Chickens Distributed by District and Year

<table>
<thead>
<tr>
<th></th>
<th>Dang</th>
<th>Pyuthan</th>
<th>Rolpa</th>
<th>Rukum</th>
<th>Salyan</th>
<th>Total</th>
<th>Total Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>037-38 (1980-81)</td>
<td>0</td>
<td>0</td>
<td>24</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>55</td>
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<tr>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
</tr>
<tr>
<td>038-39 (1981-82)</td>
<td>24</td>
<td>10</td>
<td>4000</td>
<td>15</td>
<td>0</td>
<td>200</td>
<td>18414</td>
</tr>
<tr>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
</tr>
<tr>
<td>039-40 (1982-83)</td>
<td>53</td>
<td>5</td>
<td>7014</td>
<td>10</td>
<td>15</td>
<td>10</td>
<td>5000</td>
</tr>
<tr>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
</tr>
<tr>
<td>040-41 (1983-84)</td>
<td>101</td>
<td>8</td>
<td>11150</td>
<td>20</td>
<td>500</td>
<td>10</td>
<td>11100</td>
</tr>
<tr>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
</tr>
<tr>
<td>041-42 (1984-85)</td>
<td>10</td>
<td>1500</td>
<td>10</td>
<td>1500</td>
<td>10</td>
<td>1500</td>
<td>12699</td>
</tr>
<tr>
<td>Pigs</td>
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<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
<td>Pigs</td>
<td>Ckns</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>5325</td>
<td>55</td>
<td>14150</td>
<td>101</td>
<td>19114</td>
<td>151</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
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</table>

Table 5-7: Numbers of Fodder Seedlings Distributed by District and Year

<table>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>0</td>
<td>1,569</td>
<td>6,038</td>
<td>5,392</td>
<td>12,999</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>0</td>
<td>1,500</td>
<td>5,000</td>
<td>5,000</td>
<td>11,500</td>
</tr>
<tr>
<td>Rolpa</td>
<td>0</td>
<td>3,466</td>
<td>5,010</td>
<td>5,055</td>
<td>13,531</td>
</tr>
<tr>
<td>Rukum</td>
<td>0</td>
<td>1,000</td>
<td>500</td>
<td>5,110</td>
<td>6,610</td>
</tr>
<tr>
<td>Salyan</td>
<td>0</td>
<td>1,000</td>
<td>1,277</td>
<td>5,277</td>
<td>12,217</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>8,535</td>
<td>22,488</td>
<td>25,834</td>
<td>56,857</td>
</tr>
</tbody>
</table>

NEPAL: RAFTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION

Table 5-8: Distribution of Grass Seed by District and Year
(Kg)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>614</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>0</td>
<td>0</td>
<td>110</td>
<td>0</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Rolpa</td>
<td>0</td>
<td>0</td>
<td>110</td>
<td>50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rukum</td>
<td>0</td>
<td>0</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Salyan</td>
<td>0</td>
<td>0</td>
<td>145</td>
<td>95</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>425</td>
<td>145</td>
<td>0</td>
<td>689</td>
</tr>
</tbody>
</table>

Table 5-9: Improvement of Pastureland by District and Year (Has)

<table>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>0</td>
<td>0</td>
<td>8.66</td>
<td>5.20</td>
<td>0</td>
<td>11.16</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rolpa</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rukum</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Salyan</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>16.66</td>
<td>11.20</td>
<td>0</td>
<td>11.16</td>
</tr>
</tbody>
</table>

d. Extension activities and training

Staff training provided by the Project amounted to 302 person-months (38 person-months short-term and 264 person-months for long-term BS and MS level), compared to the 55 person-months target set in the PP.

The Project provided local level in-service training to the Livestock Assistants (LAs) for 8,700 person-days, exceeding the PP target of 3,041 person-days. One thousand six hundred twenty-seven person-days of paraprofessional training for farmers at the local level was provided, compared to the PP target of 2,350 person days (see Table 5-10). Women farmers received only 63 person-days of training, all in 1984/85 (2041/42). In-service training of JT/JTAs was not conducted at the District/Regional or national level. Most training was conducted without curriculum or teaching materials. The staff trained indicated their training appeared to them to be mostly for the purpose of achieving the training target.

There were no targets in the PP for extension activities. However, since 1982/83 (2039/40), 116 discussions with farmers were held and 1,005 farmers were taken on tours (see Table 5-11). Sub-centers conducted animal fairs and sent winners to the District animal fair annually. Farmer discussions, tours, and animal fairs were useful in diffusing the purpose of the sub-centers and the veterinary hospitals. However, the quality of the discussions, tours and fairs was not high.

e. Staffing levels

A total of 212 posts were created during the Project in the Zone, of which 152 (71 percent) were filled (see Table 5-12). Little supervision of the districts came from higher levels. Farmers complained about staffing in sub-centers. Peons (laborers) and other positions were filled, but medium-level technician positions were barely 50 percent filled.

f. Office Buildings

The Project supported construction of veterinary hospitals in Dang, Rolpa, Rukum and Salyan, all of which were completed. The veterinary hospital in Pyuthan is an HMG building. The Project supported veterinarian's quarters in Dang (completed) and in Rukum (under construction). Livestock staff quarters at Dang and Rolpa are also under construction. Buildings for 26 Sub-centers of the Zone have been rented by the Project. One Service Center in each District (Dang at Chailahi, Pyuthan at Tiram, Rolpa at Jhenam, Rukum at Chaurjahari, and Salyan at Jhabang) is under construction by the Project.
Table 5-10: Person-Days of Training at the District Level by District and Year

<table>
<thead>
<tr>
<th>District</th>
<th>038/39 Frs.</th>
<th>039/40 LAs</th>
<th>040/41 Frs.</th>
<th>041/42 LAs</th>
<th>Total Of Five Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>20</td>
<td>300</td>
<td>68</td>
<td>600</td>
<td>17</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>20</td>
<td>300</td>
<td>68</td>
<td>450</td>
<td>17</td>
</tr>
<tr>
<td>Rolpa</td>
<td>147</td>
<td>270</td>
<td>204</td>
<td>150</td>
<td>17</td>
</tr>
<tr>
<td>Rukum</td>
<td>20</td>
<td>300</td>
<td>68</td>
<td>450</td>
<td>17</td>
</tr>
<tr>
<td>Salyan</td>
<td>20</td>
<td>300</td>
<td>68</td>
<td>450</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>227</td>
<td>1470</td>
<td>476</td>
<td>2100</td>
<td>1627</td>
</tr>
</tbody>
</table>

aFrs. - Farmers - Local level in-service training.

bLAs - Livestock Assistants - Local level para-professional training.

Table 5-11: Number of Farmer Discussions and Participating Farmers in Tours by District and Year

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dis</td>
<td>Tr</td>
<td>Dis</td>
<td>Tr</td>
</tr>
<tr>
<td>Dang</td>
<td>3</td>
<td>90</td>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>3</td>
<td>0</td>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>Rolpa</td>
<td>0</td>
<td>0</td>
<td>105</td>
<td>90</td>
</tr>
<tr>
<td>Rukum</td>
<td>3</td>
<td>0</td>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>Salyan</td>
<td>3</td>
<td>0</td>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>90</td>
<td>20</td>
<td>465</td>
</tr>
</tbody>
</table>

aDis = Discussions

bTr = Tours

### Table 5-12: Staffing of the Veterinary Hospitals and Sub-Centres by District (Mid-1985)

<table>
<thead>
<tr>
<th>Dang</th>
<th>Pyuthan</th>
<th>Rolpa</th>
<th>Rukun</th>
<th>Salyan</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF2</td>
<td>OF3</td>
<td>JT A</td>
<td>JTA F</td>
<td>LA A</td>
<td>P.&amp;OIR F</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>7</td>
<td>16</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>7</td>
<td>14</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
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**Source:** USAID, Briefing Book, September 1985
E. Related Activities by Other Agencies, Donors, USAID

Pyuthan Veterinary Hospital was established by the Indian Mission in 2027 (1971). In Dang District, the Asian Development Bank has for the past three years financed a vaccination and drenching project limited to the Deokhuri Valley. The solar wireless set in each District Veterinary Hospital was installed by the Bank.

F. Problems and Constraints Encountered

Delayed acceptance of annual programs and delayed budget releases were problems for livestock as for other activities. Each district expressed strong feelings that procedures must be improved.

Veterinary medicines are frequently unavailable in the field, whether through veterinary services or private commercial channels.

Lack of technical manpower, especially at the mid-level, was mentioned as a problem by all Districts. (There is a lack of mid-level technicians at the national level as well.) Moreover, available technicians did not wish to work in remote areas if they could find opportunity to be posted in more accessible areas in the region. The elimination of the project allowance and the new ruling to adjust the area allowance while staff are on tour created considerable frustration for staff posted in remote areas and decreased their mobility within the district.

Improved breeds of buffalo, cattle, and goats were brought either from India or the eastern part of Nepal. Rams were supplied from Jumla farms. Limited sources of improved breeds proved to be a significant constraint in meeting the demand for improved stock in the Zone.

The poultry program was discouraging due to the high mortality rate of chicks in transportation. Distribution of hatching eggs was tried in one district one year but was discontinued due to high breakage. Without the provision of the subsidy, the high risk involved in these programs make them difficult to initiate in the absence of better management.

Annual targets of the Department for treatment proved irrelevant. The target for the distribution of fodder seedlings created some pressure to distribute them, but there was no follow-up. Physical targets were achieved with low quality results. For example, local training targets were achieved without any training materials, training for trainers and so forth.

Temporary posting, temporary staff and frequent transfer of staff were mentioned by everyone as problems. In spite of a policy to give opportunities to project staff, training seats were provided to others not attached to the project. Every staff person interviewed mentioned that improved supervision and support from top (regional/national) levels would help motivate them.
G. **Measurement of Progress**

There is no data to establish whether or not the planned five percent decrease in adult mortality rate of cattle and five percent decrease in lambing and kidding mortality rates was achieved. Treatments, vaccinations and parasite control measures were carried, although in small numbers. There was little effort made in fodder programs. The stock improvement program was started, but still has a long way to go. Credit available for livestock increased substantially from 1980 to 1985. Increased staff and the establishment of veterinary hospitals in each district and sub-center increased institutional service capability within the project period.

H. **Findings**

1. **Contribution to Project Objectives**

It is unlikely that the Project contributed significantly to Project objectives of decreased mortality and increased milk, manure, meat, and wool production. The programs for animal health, fodder production, and stock improvements were carried out mainly in the fourth and fifth years of the project period and have thus not had time to yield benefits. However, significant institutional building and increased staffing at the District and sub-center levels was achieved. Training achievement was encouraging except for local-level training for paraprofessionals, which, moreover, failed to include many women.

2. **Effectiveness and Appropriateness**

Treatment, vaccinations and parasite control on animals were appropriate interventions for decreasing the animal mortality. Production could increase as a result. There are, however, no data to ascertain such effectiveness. Perhaps more significant is the fact that local people became more aware of and interested in livestock services. The livestock distribution program was very appropriate but was limited in scope. The most critical shortcomings of the livestock programs were insufficient emphasis on management and fodder production.

3. **Sustainability and Impact of Local Capacity**

Improved sustainability and increased local capacity is possible through:

- Nominal charges for treatment, vaccination, and drenching, which are presently provided free of charge;
- Increased training of paraprofessionals at the local level, including a majority of women; and
I. Conclusions

The project did not realize significant production achievements during the project period. However, there was significant expansion in institutional capacity at the district and sub-center level.

There was a significant increase in veterinary services working out of 26 service centers and five veterinary hospitals. However, the proportion of animals receiving treatment vaccinations and parasitic treatment is still only about 10 percent of the total livestock population.

Progress in promoting fodder production and pasture improvement was discouraging. Recommendations of the MTE to "step up animal husbandry services but only as part of an integrated strategy that includes fodder production and environmental protection" were not addressed.

There were no evident improvements in animal feed and animal production marketing.

Though limited in extent, distribution of improved breeds was successful and well-received by farmers.

J. Recommendations

- A more focused livestock development program, with clear objectives and targets should be developed, District by District, and linked with village planning for land use, crop production, horticulture and forestry programs;

- Renewed efforts through extension, training, demonstrations, trials and village planning should be programmed to help farmers improve and increase pasture and fodder production;

- Service center capability for animal health and extension work should be further expanded at the Ilaka level. Permanent housing and posting of staff should be a part of Project strategy;
As lack of trained technical manpower is a national problem, higher level and mid-level manpower training should be continued as before in India, Philippines and other Third Countries as well as in the Institute of Applied Animal Science (IAAS), Nepal. In-service training for the staff at the district/regional and higher level should be continuous in the areas of technical, administrative, national policy and project planning, programming, implementing, monitoring and evaluation support;

- Assistants (LAs) and progressive farmers at the Panchayat level should have continuous training in management, fodder production, drenching, and in animal health. Various extension tools should be used in the livestock development program. Demonstrations, competitions, audio-visual and other materials should be utilized;

- Farming systems research should be carried out on fodder production systems and potential; and

- Private enterprise approaches should be developed for:
  -- The supply of vaccines and other medical supplies for animal health care treatment;
  -- The supply of improved cross breeds to farmers (including buffaloes, cattle, goats, and sheep); and
  -- The supply of quality fodder and grass seed.
ANNEX 6

Forestry
A. Summary

Following a very slow start, and in response to recommendations of the 1983 Special Evaluation to concentrate more resources and effort on the renewable resource management component, good progress was made in the past two years in building up capacity in the Zone and the Districts to work with villages in reforestation and management of existing forest resources, and in soil conservation. The Project set in place an effective basic capacity for producing trees and establishing them on the landscapes. Given the capacity and experience of the DOF in community reforestation in the Rapti Zone at the beginning of the Project, its capacity increased at a very satisfactory rate. DFO's capacity to support community-based management of existing forest areas showed less overall progress, but a strong base of experience was laid in Pyuthan District. The total impact of this program is still limited with only about 15 percent of the villages in the Zone involved. However, it should be recognized that forestry development is a slow process and attention was rightly given to first setting in place effective capacity and procedures.

To address the Project area's problems more effectively, the quality of Department of Forest (DOF) staff and community workers must be further improved through training and incentives for quality performance. More attention must be given to implementing planning and monitoring procedures.

The rate of expansion which is practicable, manageable and sustainable and also consonant with the strategy of involving the villages and doing the work well, needs further analysis. A level of effort sufficient to have major impact on the problem of preserving and managing natural resources in the Zone will, however, require an expansion of perhaps six times current annual plantings.

B. Purpose

The purpose of the forestry sub-component was to increase improve, and preserve the stock of forest products, including fodder and fuelwood, required to sustain increased agricultural and labor productivity. This was to be accomplished by assisting local communities to establish their own management systems for forest resources though strengthening the Department of Forest's development activities.
The forestry sub-component is one of three inter-related components—forestry, soil and water conservation, and roads stabilization—directed at improving renewable resource management. Responsibility for the first two sub-components lies with two respective departments in the Ministry of Forest—the (DOF) and the Department of Soil Conservation and Watershed Management (DSCWM).

C. Background

1. Recommendations of the feasibility study

The Feasibility Study of Rapti Zone Integrated Rural Development Project recommended a several point program which included the following:

- Demarcation of a total of 1260 kilometer bounding forest areas, such as Panchayat Forest (PF), Panchayat Protected Forest (PPF), DOF plantation, and National Forest;
- Establishment of 60 panchayat and seven divisional nurseries (making a total of 12 permanent nurseries to be run by DOF). Each panchayat nursery would begin with 15,000 seedlings the first year and grow to a capacity of 40,000 seedlings per year. The divisional nurseries would grow in capacity from 20,000 to 50,000 seedlings per year;
- Plantation of 1,935 hectares of PF, beginning with six panchayats the first year and involving 60 of the Zone's 230 village panchayats by the end of five years;
- Establishment of 6,900 hectares of PPF, based on the same growth rate as above with respect to the number of panchayats participating. Each panchayat would set aside 115 ha, each year and carry out "enrichment plantings" on 35-40 hectares of the PPF during each of the first three years;
- Provision of full-time guards and fire watchers for the PFs and PPFs by the panchayats;
- Distribution of a half million seedlings to be planted by individuals and on wastelands 12,000 seedlings per year the first year and 210,000 seedlings per year by the fifth year;
- Establishment of 60 trial plots (12 each year) of 0.2 hectare each to determine suitable fuelwood and fodder tree species for particular areas;
- Setting up 104 hectares of leased forests in the hands of local individuals and/or organizations;
- Establishment of 590 hectares of DOF plantation;
o Construction and maintenance of 120 buildings, including offices, residences, and nursery stations;

o Purchase of a jeep, motorcycle, bicycle, and horses;

o Extension efforts by "forest officers and community forestry assistants. . . work(ing) toward familiarizing the people with the forest protection and extension programme"; and

o Overseas observation tours for eight forest offices and 12 range officers.1

2. Project Paper

The Project Paper's (PP's) log frame specified the following outputs:

o 915 hectares of community forest (i.e., PF), less than half that of the feasibility study;

o 6,900 hectares of PPF, 104 hectares of contract (i.e., leased) forest, and 590 hectares of national forest (i.e., DOF plantation), the same as the feasibility study; and

o 60 community nurseries and seven divisional nurseries— as in the feasibility study.

Elsewhere, the PP specified that 400,000 seedlings would be distributed, 1,260 kilometers of forest boundaries demarcated, and 60 trial plots established for evaluating species suitable for the Zone. A total of 2,100 person-days of local training, 72 person-months of academic participant training, and up to 26.5 person-months of non-academic participant training was to be provided.

3. Project agreement

The Project Agreement provided for US$ 2.5 million of AID funds to strengthen the DOF staff and facilities within the zone for carrying out and coordinating community forestry and divisional (i.e., district-level) activities. Targets for PF, PPF, and DOF forest and forest edge demarcation were the same as in the PP. An unspecified number of nurseries and trial plots were to be established to suitably support these activities.

1APROSC, Rapti Zone IRDP, Annex 9, p. 13.
4. Observations and recommendations of the 1983 special evaluation

The 1983 Special Evaluation team found that "forestry, fodder, and tree crop development are not well integrated with the household production system." The Team found indications of "important progress in some districts" with respect to PFs and PPFs, but that neither these two nor the leased private forest mechanisms were yet being "aggressively and imaginatively employed in a nation-wide program--certainly not in the Rapti Zone." The Team recommended a "major re-orientation in strategy and acceleration in program implementation in its the project environmental protection and restoration activities. The focus of these activities should be on the household and village self interest and income benefit from forest, fodder, and tree crop development" [the same kind of self-interest they now have in food production].

5. Project Extension Paper (PEP)

The PEP specified the purpose of the natural resource component, of which forestry was the largest part, was to "reverse the rate of environmental degradation and deforestation" in the Zone, with a major objective "to increase community-based management and protection of forest resources." The community forestry program was to establish and manage 2,690 hectares of forest plantations and 85 nurseries. The target for hectares planted included enrichment plantings in PPF and new DOF and PF plantings.

D. Description of Activities and Program Carried Out

1. Organization and management

The Department of Forestry is responsible for the forestry sub-component. A District Forestry Controller (DFC) is responsible for each of the four Forest Divisions (Dang, Salyan, Pyuthan and Rukum). Until this year (1985-86), Pyuthan Forest Division has included both Pyuthan and Rolpa districts, but Rolpa will now become a separate Forest Division.

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Rangers and Assistant Rangers are field technicians responsible for the implementation and supervision of community forestry activities in the Zone. There is no position of CFA (Community Forestry Assistant) as in the Community Forestry Division. Other DOF staff are forest guards. Nursery naikis (foremen) and plantation watchmen are villagers paid by the DOF.

Until recently, the DOF was responsible solely for control of the forests i.e., guarding the government-owned forests against poachers and illegal grazing. As a result, some of the DFCs and many of the rangers have no experience with community forestry and continue to focus their major efforts on control.

2. Inputs

Rs 5.4 million has been expended by USAID for the forestry component, 4.3 percent of total Project expenditures. Approximately 42 percent of forestry expenditures were made in the past year (1984-85). An additional Rs 0.7 million has been expended for the construction of Forestry offices and quarters.

Technical assistance has been provided since September 1983 through a retired DOF official, based in Kathmandu, and a former PCV, based in Tulsipur.

3. Outputs

That forestry targets have not been fully achieved over the life of the project is somewhat misleading. During the first two years of the project (1980-81 and 1981-82), virtually nothing was achieved. For the three years beginning 1982-83, however, when activity towards target achievement first began, the rate of growth in activities has been comparable to that foreseen in the feasibility study. For example, the feasibility study forecast the establishment six new panchayat nurseries the first year, 12 the second year, and 12 the third year. During the three years beginning 1982-83, ten, ten, and 14 (respectively) new panchayat nurseries have been established. Similarly, the feasibility study forecast the establishment of 30, 120, and 270 hectares of PF over the first three years. Since 1982-83, 114, 200, and 340 hectares of PF have been planted. Achievement of these and other outputs are given in Table 6-1.

Seedling distribution from nurseries is probably overstated and varies between nursery records and various compilations of these. The most extreme case encountered of overstatement was a divisional nursery with a reported capacity and distribution of 25,000 seedlings annually. It consisted, however, of only 50 square meters of seedbed space, sufficient for 20,000 seedling tubes. Of this, over six square meters of seedlings (about 2,400) had not been distributed by the end of the monsoon season (mid-September).
### Table 6-1: Forestry Outputs

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<td>Community (Panchayat) Forest (PF)</td>
<td>915 has.</td>
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<td>747 has.</td>
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<td>Panchayat Protected Forest (PPF)</td>
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<td>Community Nurseries</td>
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<td>Seedlings Distributed</td>
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<td>370,000</td>
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<td>Academic Participant Training</td>
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<td>Non-academic Participant Training</td>
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<td>Local Training</td>
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<td>2997 p/d</td>
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* p/m = person-months
* p/d = person-days
* a24 p/m Ms. training to begin this year (1985/86).
* bEstimate, based on apparent anomalies in the PP's training tables.

E. Related Activities by Other Agencies Donors and USAID

Several other activities are being carried out in Nepal in the area of community forestry, including ten donor-financed projects. The most significant of these, the HMG/FAO/UNDP Community Forestry Development Project has set up a Community Forest Division which has begun to provide support to overall DOF community forestry efforts.

The Resource Conservation and Utilization Project (RCUP) of USAID also focused on community forestry development. However, interaction was very weak between the Rapti and RCUP projects.

F. Problems and Constraints Encountered

Problems noted by DOF staff and local people include the following:

- Late budget releases delay or prevent altogether the carrying out of key activities, such as seed collection, in a timely manner;
- The perception of the DOF role as that of "controller" of the forests makes difficult a "development" (extension) role;
- People lack awareness of the importance of forest development and resource management;
- Incentives, such as project and field allowances are insufficient; and
- DOF staff are not fully capable of preparing forest management plans.

The team confirmed that, in general, these perception reflect real problems and constraints. Staff turnover and motivation is a problem. For example, there have been four DFCs in Salyan over the past two years. The vast majority of rangers have received no training in community forestry. Planning and guidance with respect to nursery propagation, site and species selection, and management plans has been weak. The guidelines for the plans are fairly complex.

G. Measurement of Progress

The numbers of seedlings planted and/or distributed has been growing each year, as noted in the sector on outputs. Surveys of nine related selected sites (covering 120 hectares) planted in Salyan, Dang, and Pyuthan districts in 1983 indicated an average survival rate of 62 percent. Surveys of eight sites (covering 91 hectares) planted in 1984 indicated an average survival rate of 71 percent.
To date, only seven management plans for PPFs have been developed, all for panchayats in Pyuthan district. Management in PPFs elsewhere is variable. Grazing often occurs, while fuelwood and fodder collection is more effectively controlled.

Korns and Smith suggest examining targets in the context of the overall size of the task at hand. Recent work by the Land Resources Mapping Project has resulted in a computer model able to project forest product supply and demand for fuelwood and fodder on a district by district basis. This model has thus far been used to assess fuelwood supply and demand, but not yet to access fodder. This model can be used to develop a reasonable strategic target for the average number of surviving seedlings needed per inhabitant per year, as proposed by Korns and Smith. In order to arrive at some idea of the relationship between the task and the project's proposed targets, the team used a much cruder means, based on present land use patterns.

Fifty-five percent (580 thousand hectares) of the area in the Rapti Zone is forested and almost 12 percent (125 thousand hectares) is grazing land—much of this heavily over-grazed. Thus, the PP set a target of turning over slightly less than 1.2 percent of the total forested area to PPF management. The Project has succeeded in turning over less than half (44 percent) of this target. Similarly, the PP set a target of planting 1525 hectares of unforested land (1.2 percent of the total amount of unforested grazing land). The project actually planted 1136 hectares—747 hectares of PF and 389 hectares of DOF plantation—which, given a 65 percent survival rate, is equivalent to only 738 hectares of established plantation, about half of the target.

H. Findings

1. Contribution to project objectives and goals

In relation to the size of the task facing it, the forestry sub-component has not yet made a significant contribution to increasing, improving, and preserving the stock of forest products required to sustain agricultural production; nor with the exception of Pyuthan District, has it assisted local communities to establish management systems. During the three years since the Project's forestry activities really began, however, steps have been made in the proper direction and the rate of growth, if continued, can lead to significant accomplishments in relation to the need.

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2. **Effectiveness and Appropriateness**

The rate of growth in the capacity of the DOF to technically support activities is appropriate. Where plantings have been carried out, community cooperation in keeping livestock off the land has been effective. Communities are not yet effective in planning and implementing their management of existing forests in their panchayats, nor is the DOF effective in its rather limited outreach efforts to involve local communities. There has been an overemphasis on overall quantity targets and insufficient attention to the quality and direction of those targets. Achievement of targets is meaningless if the quality of the product does not impress local people. At the nursery level, monitoring or control of nursery operations is not tight enough to prevent mistakes, although the technical assistance has been able to identify many of these and correct them in following years. This process of monitoring and follow-up needs to be tightened, beginning with nursery planning 18 months in advance, as existing guidelines recommend. All stages need attention, including mixing soil for the seeding tubes, seed collection, selection of seedlings for field transplanting, and weeding after transplanting.

There is no district-wide planning or prioritization of problem areas. Site selection is not generally carried out in relation to community resource needs. Sites have been well selected with respect to demonstration value (near panchayat or district centers) and the need for restoration or protection. One site observed had excessive gully erosion, for which needed additional care was not provided. Attention should also be focused, however, on sites appropriate for less stress tolerant but higher yielding or faster growing species.

Local patterns of use and preferences for forage and fuelwood are not sufficiently reflected in seedling production and site selection. Records on numbers of seedlings produced by species are not available for DOF divisional nurseries. In Salyan District, out of a total of 234,550 seedlings, more than half (55.9 percent) were pine. Only 28.7 percent of the production was for fodder or fuelwood/fodder trees.

Women are not participating greatly in the program, despite their important role in household forest resource use. There are no women nursery naikis or forest watchers.

3. **Efficiency**

USAID has expended a total of Rs 5.4 million on the forestry sub-component. This is a cost of about Rs 14.60 for each tree seedling distributed Rs 7,229 for each hectare of PF planted; and Rs 1,794 for each hectare of forest land managed. If nursery capacity and plantings continue to grow, however, economies of scale will significantly reduce these figures.
4. Manageability, sustainability, and impact on local capacity

No community forestry committee have been established through project efforts. Community contributions in forest planting and management have thus far been limited to cooperation in keeping livestock out of and cutting the grass in newly planted areas. Forest watchmen and labor costs for new plantations are paid by the DOF. Until a benefit flow of products begins, this level of community contribution is sufficient. In fact, experience elsewhere shows that paying village laborers for new plantings is a more effective approach. However, failure to get broad community participation during the planning stages can easily result in benefit flows not being allocated in a manner to ensure full community support later on.

The DOF has not been effective in working together with local people in planning existing forest management. Many of those responsible for implementing the community forestry program, including some of the DFCs, do not have adequate training in or experience with the community aspects of the program, including extension and communication techniques. Rangers, in particular, are a skilled technical resource which are not fulfilling as strong a role in community outreach as is needed. In some districts, there are minimal public information efforts and few face-to-face meetings between DOF staff and local panchayat groups on community forestry. In some panchayats and some wards of other panchayats people have been managing the government forests near them for many years without any involvement from the DOF. This management, however, could be significantly improved with DOF technical assistance. The use of ward-level groups would involve a greater management burden for the DOF than panchayat-level groups, but where ward-level groups are already functioning traditionally, benefits of maintaining and strengthening their capacity would in most cases outweigh the added costs.

5. Private Enterprise Development

No action has been taken to promote the concept of leased forests and none has been established. There is no effective follow-up support to persons receiving trees for private plantings.

I. Conclusion

- The DFO’s role in research and extension activities supporting forestry development is not uniformly effective. Management plans have been prepared for only seven panchayats, all in Pyuthan district. They have not been prepared, however, in collaboration with community forest committees, which do not yet exist. In other panchayats, local communities are managing their forest, although not entirely adequately, without the benefit of DOF assistance and experts;
The trial plot program called for in the PP has not been carried out. If plantations themselves have sometimes served inadvertently for this purpose. Seedling survival has been poor in some sites;

There is unmet demand for certain fuel and fodder species, while some species are produced in surplus. Part of this is due to difficulties in collecting seed at the right time of year. Late budget releases and poor definition and management of new roles and responsibilities in seed collection for community forestry have led to this result;

No strategic target was developed, in terms of an average number of seedlings that would have to be planted per inhabitant per year, in designing the project's outputs. The design did focus, however, on the importance of increasing annual growth in the volume of activities carried out; and

Dang District faces a number of problems and constraints which a community forestry approach alone cannot solve:

--- Fodder demand is high;
--- There is a high proportion of landless people;
--- There are large expanses of forest resources in the surrounding hill which are being over-exploited by people from villages not in the immediate vicinity of these forests; and
--- Erosion problems are acute and extensive.

As noted in the recent zonal assessment, these factors call for larger-scale DOF efforts and more private planting.

J. Recommendations

Community forestry activities should be expanded, as the absorptive capacity of the agencies (DOF and DSCWM) and the motivation of the village continues to grow. The rate of expansion which is practicable, manageable and sustainable and also consonant with the strategy of involving the villages and doing the work well, needs further analysis. A level of effort sufficient to have major impact on the problem of preserving and managing natural resources in the Zone will, however, require an expansion of perhaps six times current annual plantings. This expansion, however must take into account existing capability-levels and effective improvement of these;

5PADCO, Rapti Zone Regional Assessment, September, 1985, p.34.
The community forest program should emphasize extension public education, and working with forest user group in resource planning and management at the district, village, and, in some cases, ward levels. Capacity in planning and carrying out natural resource management should be strengthened and based on improved village-level assessment of land use and land capability patterns. In this regard, information from the Land Resources Mapping Project should be used more fully. The quality of community forestry staff, especially at the ranger and assistant ranger levels must be further improved through training and incentives centers for quality performance;

Continued emphasis is needed on restoration of degraded areas. Increased emphasis should be given to improving production, especially of fodder and multipurpose species, on sites with higher yield potential. DOF efforts could concentrate best on the latter, on protection of river-belt areas, and on effective forest/pasture management of the deforested hill areas. More serious restoration problems are best given to the DSCWM. The efforts of these two departments should be closely coordinated. The adaptive field trials called for in the PP should be carried out;

Monitoring and supervision of all phases of forest activities should be strengthened; Inter-agency coordination should be strengthened through increased support for such coordination at the national and zonal levels and through planning and implementation training services for inter-agency groups. Particular attention should be given to close coordination of forestry and livestock/fodder production activities;

Private sector involvement, including private plantings, leased forests, and private nurseries, should be encouraged and administrative obstacles to such involvement diminished. Deforestation, land degradation, and forest management problems in the Dang Valley area should be addressed by DOF plantation and management as well as community approaches;

Women should be included in forestry development activities and training programs;

The experience of the many and varied community forest projects in Nepal, including USAID’s RCUP, should be drawn upon; and

Peace Corps support for the forestry component should be continued. The design of the second phase of the Project should consider the provisions of food-for-work programs in forestry activities through UNWFP. (See Annex 25.)
ANNEX 7

Soil Conservation
ANNEX 7

Soil Conservation

A. Summary

The project assisted institution building by funding the establishment and staffing of a Zonal office of the Department of Soil Conservation and Watershed Management (DSCWM) in Tulsipur, Dang. Although not all targets were fulfilled, the program of DSCWM was successful in introducing site-specific demonstration activities in the Rapti Zone. The scope of DSCWM's efforts was limited in relation to the extent of soil erosion problems. In future planning, the capacity of DSCWM should be strengthened and the program extended widely. Local participation, local leadership and local energies need to be enlisted in support of essential soil conservation work based upon practical plans. Village use of land must be carefully examined and the interrelated problems of soil conservation and other activities of man in the quest of food, fodder and fuel addressed. River and stream training in the Rapti Zone offer opportunities for DSCWM to protect existing farm land and reclaim additional valley land for cultivation.

B. Purpose

The purpose of this program is to alleviate and check environmental degradation by treating the most critically affected sites and launching an extension and education program for the people in the Rapti Zone.

The PP included this activity under the program component Renewable Resource Management (RRM) and noted the following:

By the second year of the project, a soil and water conservation program will be established within the Zone with offices located in Dang and mobile teams to serve the hills. Over 400 hectares of critically eroded areas throughout the Zone will be treated as demonstration plots through use of biological control methods including fodder, fuel tree and bamboo plantation and improved pasture development. Operational land use plans for Dang and other eroded areas will be formulated.¹

The component is also tied to the project purpose of improving local demand for, and control of, national level delivery systems for improved resource management (among others).

¹PP, p. 9.
C. **Background**

The **Feasibility Study of the Rapti Zone Integrated Rural Development Project** recommended a four-point program including those activities reflected in the PP and ProAg. It consisted of the establishment of a zonal office of DSCWM, site-specific demonstration schemes, development of operational land use plans for selected areas; and education and training programs for farmers and conservation technicians.

The 1983 Special Evaluation report in its conclusions had identified five areas in which action was essential, of which the foremost of the five was the ecological situation:

A major change in strategy, priority and commitment is required to reverse the profound negative impact of the household production system, and development activity in general on the environment. The basic life support structure of the hill economy is deteriorating rapidly. An approach is required that will harmonize household production interests with the preservation and development of the environment. Similarly, the protection of the land with trees and ground cover should be an integral part of all development activity in the districts.2

D. **Description of Activities and Program Carried Out**

1. **Organization and Management**

The Zonal Office of DSCWM at Tulsipur was opened in 1982. The Project funded most of the costs of administration and of programs being carried out in the Rapti Zone. The Project also financed a Zonal Headquarters complex and staff office quarters for the Project Chief and technicians. The Zonal Office staff included six technicians and nine administrative personnel. There were also 20 plantation watchmen.

The soil conservation and watershed management activities of DSCWM are a national program. The Department is only 11 years old, currently working in 26 districts of the country. These include five Rapti Zone districts and three others under the RCU Project.

The Rapti soil conservation program operated entirely out of the Zonal Office in Tulsipur. To extend its capability to initiate soil conservation work in the Hills, the Department hopes to establish District soil conservation offices in each Hill District. These would be staffed by a gazetted class III officer, one ranger, one overseer, one JT and seven other administrative staff. The Zonal Office would continue to cover Dang district, regarded as the third most environmentally degraded district in the country.2

2MTE, p. 3.
The Zonal Office managed its work on the basis of a workplan and budget developed in consultation with the MPLD (PCO) and USAID. For the FY 1985/86, DSCWM has a work plan (see Annex 7-1) to establish one nursery and operate five others already established, develop a conservation plantation of 100 ha on an impacted area, rehabilitate three canals, protect four water sources, improve and protect five km of trail, control landslides and gully erosion at three sites, conduct conservation education in 15 villages and maintain previous years' work. The Zonal Office assisted the five districts in planning soil conservation activities for the Seventh Five Year Plan.

2. Inputs

The budget and expenditures for soil conservation activities for fiscal years 1980/81 through 1984/85 are shown in Table 7-1. USAID/N expenditure total Rs 3.0 million, 84 percent of total expenditures. The planned program for 1985/86 is given in Annex 7-1.

3. Outputs

a. Accomplishment in General

Accomplishments (see Annex 7-2) in the Soil Conservation component included construction of a zonal office in Tulsipur, Dang, preparation of land use plans in two panchayats of Dang, watershed area treatment of approximately 600 ha, conduct of extension and education program for farmers, school pupils and panchayat technicians and annual maintenance of previous years' works. The watershed area treatment program included establishment of five nurseries; production of 765,000 seedlings; distribution of 100,000 seedlings to the people for private plantations; conservation plantations totalling 170 hectares at seven different impacted sites; rehabilitation of eight different existing canals, including five kilometers of canal realignment; protection of three different community water sources; improvement of one trail; and stabilization of 15 km of roadside in two different sites. The activities of this component were concentrated mainly in Dang District and in Pyuthan and Salyan Districts to a lesser extent. Virtually no significant effort was focused on Rukum and Rolpa Districts.

b. Extension Program

DSCWM had a regular program of extension education to farmers and village leaders using materials generated by the FAO/UNDP Watershed Management and Conservation Education (WMCEP) Project. Teams from the Zonal Office visited a group of five village panchayats on a ten-day tour/trek. In this way, they visited 25 to 30 villages, spending a day or two with village leaders/officials and surveying soil conservation problems.
### Table 7-1: Budget and Expenditure for Soil Conservation Activities
#### Fiscal Year 1980/81 - 1984/85

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>US Releases</th>
<th>Total Expenditures</th>
<th>USAID Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981/82(2038/39)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>1982/83(2039/40)</td>
<td>974.02</td>
<td>651.74</td>
<td>533.29</td>
</tr>
<tr>
<td>1983/84(2040/41)</td>
<td>1,623.07</td>
<td>1,356.50</td>
<td>1,251.15</td>
</tr>
<tr>
<td>1984/85(2041/42)</td>
<td>1,188.50</td>
<td>1,032.74</td>
<td>910.70</td>
</tr>
</tbody>
</table>

**Total:**

<table>
<thead>
<tr>
<th>US Releases</th>
<th>Total Expenditures</th>
<th>USAID Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,612.59</td>
<td>4,766.36</td>
<td>4,296.89</td>
</tr>
</tbody>
</table>

Source: USAID, Rapti Zone Briefing Book, August 1985, and Rural Area Development office.
c. **Popular Participation**

DSCWM carried out its projects without voluntary labor. However, the Zonal Office did enlist the participation of the local communities in the planning of these projects and in keeping people and animals off areas being reclaimed.

d. **DSCWM Nurseries**

Nurseries were an essential part of the DSCWM program. The Department relied principally on biologically control measures (plus some gabion structures where essential. It used different tree and plant species to regenerate barren land. DSCWM had five nurseries in the Zone and produced 300,000 seedlings per year. Two nurseries are located in Dang and one each in Salyan, Pyuthan and Rolpa Districts. Three more nurseries are needed – one in Deukhuri Valley, one in Western Dang and one in Rukum.

e. **Training**

One person received a month of training from the Philippines, on regional watershed management; another received six month training from India on Soil and Water Conservation. One more technician is currently in training at the MSc level in water management (24 months) in the USA. A fourth person is scheduled to receive forestry training for two months in a third country beginning October 1985.

4. **Related activities**

The soil conservation component is intimately related to most other sectoral components, viz; agriculture cum horticulture practices, livestock management practices, forest and pasture management practices, education, rural household production, irrigation and rural works. All rural works (irrigation structures, river training, roads, construction, building construction, drinking water systems, trail construction, suspension bridges, etc.) have a direct bearing on soil conservation needs and the preservation of the delicate mountain environment of the project area.

The Department of Roads operated a biological stabilization program for road corridors to minimize the negative environmental impact of road construction through the hill districts. As of mid-1985, some 90 hectares of plantation for the revegetation and management of some portions of two of the road corridors had been done. For further details on the biological stabilization program, see Annex 13.
E. **Problems and Constraints**

Problems and constraints, include the following:

- Lack of comprehensive land use plans for preparing an effective soil conservation and water management program for the Rapti Zone;

- Difficulty in enlisting the participation of the entire community. Reclamation work was usually done on the most impacted public land, which usually had some existing community use. The Project Chief often must exercise perseverance and constant personal effort to gain community cooperation;

- Lack of awareness of the people of the seriousness of soil erosion and environmental problems and lack of adequate resources for their education;

- Local political and administrative pressure in the selection of appropriate sites for conservation programs;

- Lack of manpower, both authorized posts and technicians willing to fill them, especially middle level technicians who prefer to stay in Kathmandu or in easily accessible areas. The lack of offices in the hill districts of Rapti Zone was also a problem;

- Slow and untimely release of budgets for project implementation;

- Limited capacity of poor tenant farmers to participate actively in soil conservation work;

- Lack of representation on any district level committees;

- Lack of a permanent extension officer for the education and extension program; and

- Reduced incentives to work in remote field sites, especially for middle and lower level officials.

F. **Findings**

Although treatment of only 170 ha of a targeted 400 has of critically impacted area was carried out and no land use plans were prepared, the program specified in the PP was begun. The establishment of a Zonal Office for DSCWM at Tulsipur created an institutional base to enable an accelerated pace of development in the future. The work accomplished by DSCWM included site-specific demonstration plots or land use plans related to very important needs and problems of the people.
The work of the DSCWM differed from that of DOF or DIHM. Forestry was clearly more production-oriented while DSCWM focused on soil conservation of critically-impacted areas. Irrigation was mainly concerned with development of new systems while DSCWM worked to show farmers how to conserve soil while operating their systems. DSCWM should be responsible for river training, which the team observed was badly needed on many rivers in Dang, Jhimruk river in Pyuthan, Jhari Khola in Rukum, and others. An important function of DSCWM in Rapti Zone was helping communities protect water supplies from erosion or landslide. The DSCWM's role was appreciated, and the impact of the demonstration plots helped many people to adopt such practices in conserving their fields.

G. Conclusions

The soil conservation program was established, as set forth in the Project design and ProAg, with the exception of completion of land use plans for Dang District. However, the scope of DSCWM's work was very limited in relation to the dimensions of the soil erosion problem.

The extension efforts of the Zonal Office of DSCWM were useful but were carried out without the active participation of the people. Local participation, local leadership and local energies were not enlisted in support of essential soil conservation work based on practical plans. District Panchayats did not recognize and take into account soil conservation concerns in District-level planning. Village use of land must be scrutinized and the interrelated problems of soil conservation, forestry development, pasture improvement, irrigation improvement, fodder production, soil fertility and field cropping addressed. The establishment of district-level Soil Conservation Offices will help Districts more in these directions.

River and stream training in Rapti offer opportunities to protect existing farm land and reclaim additional valley land for cultivation.

H. Recommendations

- Surveys of critically impacted areas should be undertaken and requirements for stream/river training should be assessed for every District. Based upon such surveys and requirements, HMG should include soil conservation measures in District Panchayat planning;

- The program in Rapti Zone should be strengthened under the follow-on Project by providing support to DSCWM in establishing additional nurseries and offices in Salyan and Pyuthan within the next year or two, and in Rukum and Rolpa as soon as possible thereafter;
Training should be provided to village leaders in soil conservation as well as reforestation and pasture management;

District Panchayats should ensure coordination among district forestry, agriculture, livestock and soil conservation officers and should initiate pilot measures to encourage village landuse planning. Local development plans should take advantage of such land use planning; and

Soil conservation and river training works should be based upon local participation to the maximum extent. Technical assistance, supply of gabion wire, and food for work programs should be provided to support popular participation.
## ANNEX 7-1

DSGM Program and Budget by District (1985/86)

(Budget Figures in Rs)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Dang Quantity</th>
<th>Dang Budget</th>
<th>Salyan Quantity</th>
<th>Salyan Budget</th>
<th>Pyuthan Quantity</th>
<th>Pyuthan Budget</th>
<th>Rolpa Quantity</th>
<th>Rolpa Budget</th>
<th>Rukum Quantity</th>
<th>Rukum Budget</th>
<th>Rapti Zone Total Quantity</th>
<th>Rapti Zone Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursery Establishment</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>1 site</td>
<td>30,000</td>
<td>1 site</td>
<td>30,000</td>
</tr>
<tr>
<td>Nursery Operation</td>
<td>2 sites</td>
<td>44,400</td>
<td>1 site</td>
<td>22,200</td>
<td>1 site</td>
<td>22,000</td>
<td>1 site</td>
<td>22,000</td>
<td>-0-</td>
<td>-0-</td>
<td>5 sites</td>
<td>110,800</td>
</tr>
<tr>
<td>Conservation Plantation</td>
<td>70 ha.</td>
<td>245,000</td>
<td>10 ha.</td>
<td>35,000</td>
<td>10 ha.</td>
<td>35,000</td>
<td>5 ha.</td>
<td>17,500</td>
<td>5 ha.</td>
<td>17,500</td>
<td>100 ha.</td>
<td>350,000</td>
</tr>
<tr>
<td>Land Stabilization</td>
<td>2 sites</td>
<td>130,000</td>
<td>1 site</td>
<td>65,000</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>3 sites</td>
<td>195,000</td>
</tr>
<tr>
<td>Water Source Protection</td>
<td>-0-</td>
<td>-0-</td>
<td>1 site</td>
<td>50,000</td>
<td>1 site</td>
<td>50,000</td>
<td>1 site</td>
<td>50,000</td>
<td>1 site</td>
<td>50,000</td>
<td>4 sites</td>
<td>200,000</td>
</tr>
<tr>
<td>Trail Improvement</td>
<td>2 km.</td>
<td>80,000</td>
<td>1 km.</td>
<td>40,000</td>
<td>1 km.</td>
<td>40,000</td>
<td>1 km.</td>
<td>40,000</td>
<td>-0-</td>
<td>-0-</td>
<td>5 km.</td>
<td>200,000</td>
</tr>
<tr>
<td>Control of Landslide and Gully Erosion</td>
<td>2 sites</td>
<td>20,000</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>1 site</td>
<td>100,000</td>
<td>3 sites</td>
<td>300,000</td>
</tr>
<tr>
<td>Conservation Education</td>
<td>4 times</td>
<td>10,000</td>
<td>2 times</td>
<td>5,000</td>
<td>4 times</td>
<td>10,000</td>
<td>4 times</td>
<td>10,000</td>
<td>1 time</td>
<td>2,000</td>
<td>15 times</td>
<td>37,000</td>
</tr>
<tr>
<td>Maintenance of Past Year Works</td>
<td>-0-</td>
<td>40,000</td>
<td>-0-</td>
<td>10,000</td>
<td>-0-</td>
<td>30,000</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>-0-</td>
<td>80,000</td>
<td></td>
</tr>
</tbody>
</table>

Source: DSGM Zonal Office, Tulsipur.
### ANNEX 7-2

Accomplishment by DSCNM-Tulsipur, Rapti Zonal Office (1981-1985)

<table>
<thead>
<tr>
<th>SNO.</th>
<th>Description Activity</th>
<th>Number of Activities</th>
<th>Planned</th>
<th>Implemented</th>
<th>Dang</th>
<th>Salyan</th>
<th>Pyuthan</th>
<th>Rukum</th>
<th>Rolpa</th>
<th>Year of completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Construction of Zonal office buildings</td>
<td></td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1981/82</td>
</tr>
<tr>
<td>2</td>
<td>Land use of Amritpur and Laxmipur Panchyat</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1981/82</td>
</tr>
<tr>
<td>3</td>
<td>Establish Meteorological Station</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1982/83</td>
</tr>
<tr>
<td>4</td>
<td>Watershed area treatment</td>
<td></td>
<td>400 ha</td>
<td>600 ha</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1981/82-1983</td>
</tr>
<tr>
<td></td>
<td>(i) Nursery Establishment</td>
<td></td>
<td>-</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1981/82-1983</td>
</tr>
<tr>
<td></td>
<td>(ii) Seedling Production (Number)</td>
<td></td>
<td>-</td>
<td>7,65,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1981/82-1983</td>
</tr>
<tr>
<td></td>
<td>(iii) Seedling distribution (Number)</td>
<td></td>
<td>-</td>
<td>100,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1981/82-1983</td>
</tr>
<tr>
<td></td>
<td>(iv) Irrigation canal rehabilitation (No. of sites)</td>
<td></td>
<td>-</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1983/84-1985</td>
</tr>
<tr>
<td></td>
<td>(v) Community water source protection (No. of sites)</td>
<td></td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1983/84-1985</td>
</tr>
<tr>
<td></td>
<td>(vi) Conservation/plantation (a) in ha.</td>
<td></td>
<td>-</td>
<td>170</td>
<td>150</td>
<td>10</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>1981/82-1983</td>
</tr>
<tr>
<td></td>
<td>(b) ha of sites</td>
<td></td>
<td>-</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1981/82-1983</td>
</tr>
<tr>
<td></td>
<td>(vii) Trail in improvement</td>
<td></td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1983/84-1985</td>
</tr>
<tr>
<td></td>
<td>(viii) Road side stabilization with fencing (a) in ha (b) ha of sites</td>
<td></td>
<td>-</td>
<td>15</td>
<td>5</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>1981/82-1983</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1984/85</td>
</tr>
<tr>
<td>5</td>
<td>Extension and education program</td>
<td></td>
<td>900</td>
<td>1050</td>
<td>-</td>
<td>28</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) Farmers (Nos.)</td>
<td></td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(b) Schools (essay competition, education &amp; film show)</td>
<td></td>
<td>-</td>
<td>28</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c) Poster Pamphlets</td>
<td></td>
<td>-</td>
<td>500</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(d) Panchayat Technicians (persons)</td>
<td></td>
<td>50</td>
<td>26</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Maintenance</td>
<td></td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) Gully Control (No.)</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(b) Afforestation, of previous year</td>
<td></td>
<td>-</td>
<td>60</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 8

Agricultural Credit/Small Farmer Development Program (SFDP)
ANNEX 8

Agricultural Credit/Small Farmer Development Program (SFDP)

A. Summary

The agricultural credit component of the Rapti Zone project, including the Small Farmer Development Program, is one of the most visibly successful project elements at reaching and benefitting the target group. Working with the Agriculture Development Bank (ADB/N) of Nepal, the project has tapped into a relatively strong institutional base; in the case of SFDP picking up the costs within Rapti Zone of a nationwide ADB/N-managed project assisted nationally by IFAD. This calls into question the essentiality or organization of this project component, just as expenditure patterns and administrative costs call into question absorptive capacity and sustainability of this project component, despite its demonstrated success on the ground and surprisingly substantial outreach. Agreed upon levels of ADB/N regular credit and SFDP activity should be assured through the negotiation with HMG and the nation-wide program donors, deleting these program from project management but not from the Zone. Continued expansion should not be imperiled.

B. Purpose and Methodology

The Project Paper is somewhat sketchy on the agricultural credit program. No mention is made of the non-SFDP portion of the agricultural credit program. In support of the farming systems objectives of the Project, the paper notes that the Project will support a locally generated "demand" for and control of these new inputs and technologies by applying three basic mechanism: (a) locally recruited male and female extension workers, (b) male and female leader farmers,] and (c) each district will have at least five active Small Farmer Development Program Units (SFDP) with approximately 40 groups of 10-15 families or family members formed by each unit. These groups will facilitate access to credit, technical assistance and inputs for farmers whose holdings are too small or who are legally or culturally dissuaded from receiving credit on an individual basis. They can be expected to increase significantly the degree to which small farmers participate in decision-making concerning agricultural development and share in the benefits, as has been demonstrated persuasively elsewhere in Nepal.1

1 IPP, p. 8.
There is no description in the PP of the regular, non-SFDP program of the ADB/N which was also to receive Project support. Budgeted inputs from AID for these credit elements over the life of the Project were three fold. The Project provided US$ 282,000 for the "Credit Access" element, which went to help ADB/N expand its regular facilities and program in the Rapti Zone through support for facilities expansion, and equipment staff training, and some operating funds for promotion and administration of an expanded program. The SFDP was budgeted at US$ 593,000 for staff salaries, operating expenses, training of staff and farmers, facilities and offices, furniture and equipment, etc. The PP called for HMG contributions of US$ 105,000 and US$ 211,000 respectively for each of these two components. Finally, US$ 1,040,000 was to be provided as equity for the regular and SFDP credit programs of ADB/N, with no HMG counterpart.

C. Sectoral Context

In order to provide some context for Project credit activities, the following discussion is provided from the draft Louis Berger Socio-Economic study of Rapti Zone, followed by the PADCO Regional Assessment table comparing ADB/N with other institutional credit availabilities over the Project period.

1. Institutional Credit

Table 8-1 shows the total amount of credit provided by the country's major financial institutions to the various districts of the Rapti Zone during the last four years. The loans provided by the Agricultural Development Bank are for the most part short-term agricultural and agricultural related activities loans of which about 40 percent in the hill districts and 10 percent in Dang are loans under the HMG's Small Farmer Development Programs. The Nepal Bank and the Rastrriya Banijya Bank, are both (majority HMG-owned) commercial banks. Beside financing agricultural activities, they provide loans to finance industry, trade and services activities. In 1983-84, the credit provided by these two banks was divided approximately 42 percent to agricultural activities, 49 percent to industrial activities and nine percent to trade and services activities.

2. Non-institutional Borrowing

Because of difficulties in getting this kind of information from the farmers themselves, it was not possible to quantify the amount of non-institutional borrowing which occurs in the Rapti Zone. Such borrowing takes place in kind and in cash. The payments can be in kind, work or cash. As a general rule, the team's field investigation revealed that in the area where the Agricultural Development Bank and the two mentioned commercial banks have branch offices, non-institutional borrowing to conduct agriculture and business activities almost disappears. It continues, however, for most family and social purposes. The Rapti Baseline Survey by APROSC reported that, in 12 months of 1979-80, 18.38 percent of Rapti households
### NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION

#### Table 8-1: Amount of Credit Provided by Major Financial Institutions, 1981-84

(Thousands of Current Rs.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dang</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADB/N</td>
<td>2,923</td>
<td>8,004</td>
<td>8,775</td>
<td>9,612</td>
</tr>
<tr>
<td>Nepal Bank</td>
<td>7,619</td>
<td>8,301</td>
<td>7,389</td>
<td>10,227</td>
</tr>
<tr>
<td>R.B. Bank</td>
<td>2,304</td>
<td>2,340</td>
<td>2,936</td>
<td>5,344</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12,846</td>
<td>18,645</td>
<td>19,100</td>
<td>25,183</td>
</tr>
<tr>
<td>Percent of Zone</td>
<td>(43.5)</td>
<td>(45.8)</td>
<td>(46.7)</td>
<td>(43.8)</td>
</tr>
<tr>
<td><strong>Pyuthana</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADB/N</td>
<td>911</td>
<td>1,395</td>
<td>1,295</td>
<td>1,842</td>
</tr>
<tr>
<td>Nepal Bank</td>
<td>7,084</td>
<td>8,158</td>
<td>7,255</td>
<td>10,945</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7,995</td>
<td>9,553</td>
<td>8,550</td>
<td>12,787</td>
</tr>
<tr>
<td>Percent of Zone</td>
<td>(27.0)</td>
<td>(23.4)</td>
<td>(20.9)</td>
<td>(22.2)</td>
</tr>
<tr>
<td><strong>Rolpa</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADB/N</td>
<td>406</td>
<td>1,160</td>
<td>945</td>
<td>1,389</td>
</tr>
<tr>
<td>Nepal Bank</td>
<td>4,125</td>
<td>5,496</td>
<td>5,821</td>
<td>7,143</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4,531</td>
<td>6,656</td>
<td>6,969</td>
<td>9,346</td>
</tr>
<tr>
<td>Percent of Zone</td>
<td>(15.3)</td>
<td>(16.3)</td>
<td>(17.0)</td>
<td>(16.2)</td>
</tr>
<tr>
<td><strong>Salyan</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADB/N</td>
<td>675</td>
<td>986</td>
<td>1,183</td>
<td>2,282</td>
</tr>
<tr>
<td>Nepal Bank</td>
<td>1,160</td>
<td>1,408</td>
<td>1,414</td>
<td>2,210</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,835</td>
<td>2,394</td>
<td>2,597</td>
<td>4,492</td>
</tr>
<tr>
<td>Percent of Zone</td>
<td>(6.2)</td>
<td>(5.9)</td>
<td>(6.4)</td>
<td>(7.8)</td>
</tr>
<tr>
<td><strong>Rukum</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADB/N</td>
<td>172</td>
<td>357</td>
<td>655</td>
<td>1,223</td>
</tr>
<tr>
<td>Nepal Bank</td>
<td>2,174</td>
<td>3,128</td>
<td>3,011</td>
<td>4,364</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,346</td>
<td>3,485</td>
<td>3,666</td>
<td>5,715</td>
</tr>
<tr>
<td>Percent of Zone</td>
<td>(7.9)</td>
<td>(8.6)</td>
<td>(9.0)</td>
<td>(9.9)</td>
</tr>
<tr>
<td><strong>Rapti Zone</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADB/N</td>
<td>5,087</td>
<td>17.2</td>
<td>11,902</td>
<td>12,853</td>
</tr>
<tr>
<td>Nepal Bank</td>
<td>22,162</td>
<td>75.0</td>
<td>26,491</td>
<td>24,890</td>
</tr>
<tr>
<td>R.B. Bank</td>
<td>2,304</td>
<td>7.8</td>
<td>2,340</td>
<td>3,139</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>29,553</td>
<td>100.0</td>
<td>40,733</td>
<td>40,883</td>
</tr>
</tbody>
</table>

*a* No lending by R.B. Bank.

**Abbreviations:**
- **ADB/N** = Agricultural Development Bank of Nepal
- **Nepal Bank** = Nepal Bank Limited
- **R.B. Bank** = Rastriya Banijya Bank

**Source:** PADCO, Rapti Zone Regional Assessment, 1985, Table III.2, pp. 75-76.
borrowed an average of Rs. 1217 from institutional sources, and that 3.32 percent of the households borrowed an average of Rs. 79 in-kind and less than one percent borrowed an average of Rs. 1160 in cash from non-institutional sources. Except for some variations among districts, especially in regard to the borrowing in kind, there were no major differences reported in interest charges. The average interest for non-institutional borrowing in kind was reported of 17.33 percent; that of non-institutional borrowing in cash was 14.30 percent, and the interest on institutional borrowing amounted to 15.57 percent.

D. Actual Inputs

It is somewhat difficult to compare the PP budget given above for these three credit components with the inputs actually provided. Part of the difficulty is that the PP budgeted in dollars, while all subsequent project transactions and records are in Nepalese rupees, which varied in exchange rate over the project period from 10 to 17 to the dollar. Additionally, substantial amounts of the funding subobligated for credit access and SFDP each year by PIL was de-subobligated some time after the end of that fiscal year. Accordingly, Table 8-2 for project funding during NFY 2037/38 - 2041/42 (roughly corresponding to the USFY 1981/85 period of the PP) shows the total of annual budgeted (subobligated) amounts; the net budgeted (subobligated) amounts to date; and the expenditures to date.

These figures probably acquire increasing reality as one moves to the right. However, comparing the net budgeted or subobligated column to the PP figures, and somewhat arbitrarily picking Rs. 15 to the dollar as a midway exchange rate through the project, the provision of funds, over the equivalent period, is 34 percent of the PP budget for Credit Access; and 46 percent of the SFDP budget. The equity portion was converted into rupees in two installments at exchange rates totalling an actual US$ 901,000, or 89 percent of the PP budget. Comparing planned to actual expenditure over the period, credit access get 26 percent; SFDP get 18 percent; equity remains at 89 percent of planned expenditures.

These shortfalls are attributable to absorptive capacity during the buildup of the SFDP program and the ADB/N expansion. Thus, credit access had no money in the first year, Rs. 100,000 in the second year, and tripled in the third year. (Deobligations for the fourth and fifth year have not yet been made.) SFDP spent Rs. 132,000 in the first year, tripled in the second, and tripled again in the third. Additionally, the decision was made under SFDP to put priority on intensifying and strengthening of the earlier SFDP programs before expanding to too many new ones, which would have used more money for salaries and facilities.
### Table 8-2: Credit Component USAID Funding, NFY 2037/38 - 2041/42 (Rs '000)

<table>
<thead>
<tr>
<th>Element</th>
<th>Total Budgeted</th>
<th>Net Budgeted</th>
<th>Total Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Access</td>
<td>3,709</td>
<td>1,418</td>
<td>1,102</td>
</tr>
<tr>
<td>SFDP</td>
<td>8,568</td>
<td>4,099</td>
<td>1,595</td>
</tr>
<tr>
<td>Credit (Equity)</td>
<td>11,943</td>
<td>11,943</td>
<td>11,943</td>
</tr>
</tbody>
</table>

The HMG contribution for the credit access element is not documented, although since the project is not paying for salaries the requirement may well have been met. The SFDP program, contrary to the PP, is 100 percent financed by the project. On the other hand, the credit equity of Rs. 12 million which the project provided compares with total ADB/N lending to the project area over the project period of Rs. 46-1/2 million. Patterns of growth will be discussed below.

E. ADB/N Credit Access

The impression consistently received from farmers and officials in the districts is that the constraint on credit use is not the availability of funds. There were few reports of applications being turned down because of insufficient availabilities. Rather the number and accessibility of credit outlets appears to be the constraint; and from that point of view the project interventions appear to have been successful.

No quantitative goals were established for the expansion of regular ADB/N credit in the Zone, but as Table 8-1 above indicates, ADB/N credit provided to the zone tripled from 1981-1984, and its share of institutional credit increased by two-thirds. Expected allocations for 2041/42, (which ended in July, 1985 and thus roughly corresponds to FY 1985) are substantially higher, although figures will not be available for several months. ADB/N plans call for mobilizing Rs. 550 million in credit for the Rapti Zone over the next five years.

At the beginning of the project, ADB/N outlets numbered four sub-branches, one in each district but Rukum, staffed by 10 gazetted (senior), 17 non-gazetted officers and 10 other staff. By 2041/42, there were established a Zonal ADB/N office and seven sub-branches (the former and three of the latter in Dang), staffed by a total of 13 gazetted, 50 non-gazetted officers and 17 others. ADB/N is planning to add two more sub-branches this year. Salary costs for this staffing increase is borne by ADB/N from non-project resources.

In order to facilitate access for small farmers to the regular credit program, there is no ADB/N minimum loan size requirement. Additionally last year they introduced a simplified application procedure for production loans, whereby groups of farmers can apply at the same time for individual loans, and also a preapproved line of credit. Land and buildings are the usual collateral, although loans to tenants may be secured by crop yields. Although there are individual women borrowers from ADB/N, it should be noted that there is a policy restricting loans to women without the husband’s permission, a policy that has been waived by at least one of the commercial banks.

Repayment rates reported vary widely, from 54 percent for cereal production loans in Rolpa where there were extensive crop failures to 70 percent reported by ADB/N/Kathmandu, 58 percent reported in Pyuthan, and 108 percent reported for non-cereal loans, again in Rolpa District (due to early repayments). Project records for loan repayments made
and overdue as a proportion of lending show no clear pattern and are somewhat at variance with information reported to the Team by field staff in the Rapti Zone. For example, SFDP repayment rates are consistently reported to be higher than overall ADB/N loan repayment rates (see Table 8-3).

The annual, geographic, and sub-sectoral distribution of ADB/N lending in Rapti Zone (again including SFDP, which will be discussed separately later) is shown in the Table 8-4, running from NFY 2036/37 (USFY 1980) to the first half of NFY 2041/42 (USFY 1985).

A few things might be noted about the distribution of lending activities here. First, the Equipment category may include lending for the purchase of bullocks, elsewhere categorized by ADB/N as agricultural mechanization rather than livestock because they are used to pull plows. Second, the figures for irrigation lending do not yet show ADB/N's stated new emphasis on dramatically increased lending for shallow tube well irrigation, particularly in the Dang area, but nationwide as well, in conjunction with a CARE-assisted program. Third, the Industries category is largely for modest cottage industry lending, which will be discussed in a separate annex, as well as lending for biogas facilities under the auspices of the ADB/N-housed Appropriate Technology Unit program.

F. Small Farmer Development Program (SFDP)

The SFDP is a supervised credit program which functions more or less as envisioned in the Project Paper quoted above. Project documentation, however, does not always emphasize the extent to which the Rapti project involvement in SFDP is buying into an ongoing, larger, nationwide program. While other IRD project donors may also support the local SFDP in their project areas, the basic nationwide SFDP is supported by the International Fund for Agricultural Development (IFAD) and the UN Food and Agriculture Organization (FAO).

The ADB/N is the implementing agency for the entire SFDP, and the ground rules are the same. The ADB/N establishes SFDP units in promising areas, staffed by a Group Organizer. Initially the Group Organizer conducts a survey of farmers in the area, usually a panchayat or sometimes two, to identify the target group. For project purposes, a small farmer is defined as one having a net family per capita income of up to Rs. 950 ($56) a year, including off-farm sources of income but excluding the costs of production.

Once the survey identifies the small farmers, the Group Organizer goes out and attempts to organize them into groups which will have access to ADB/N for individual or group borrowing on the basis of collective liability. Interviews with a number of SFDP groups and Organizers indicated a pattern of monthly group meetings, decision by consensus rather than voting, and ancillary community activities almost entirely restricted to group savings programs to satisfy the
### Table 8-3: ADB/N and SFDP Loan Repayments Made and Overdue by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>ADB/N Repayments Made</th>
<th>ADB/N Repayments Overdue</th>
<th>SFDP Repayments Made</th>
<th>SFDP Repayments Overdue</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 1980</td>
<td>75%</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 1981</td>
<td>94%</td>
<td>8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 1982</td>
<td>61%</td>
<td>91%</td>
<td>9%</td>
<td>50%</td>
</tr>
<tr>
<td>FY 1983</td>
<td>57%</td>
<td>51%</td>
<td>15%</td>
<td>14%</td>
</tr>
<tr>
<td>FY 1984</td>
<td>60%</td>
<td>57%</td>
<td>33%</td>
<td>16%</td>
</tr>
<tr>
<td>FY 1985 (first half)</td>
<td>49%</td>
<td>NA</td>
<td>21%</td>
<td>23%</td>
</tr>
<tr>
<td>Total</td>
<td>61%</td>
<td>51%</td>
<td>24%</td>
<td>19%</td>
</tr>
</tbody>
</table>

*Includes SFDP loans.

**NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION**

**Table 8-4: Rapti Project Agricultural Credit: All Loan Amounts**

| OFFICE | DISTRICT | AGRI, HORT. LIVSTK INPUTS | EQUIP. | IRRIS. | INDUST. | BIOA9 | L | ORURTOTAL | OFFICE | DISTRICT | AGRI, HORT. LIVSTK INPUTS | EQUIP. | IRRIS. | INDUST. | BIOA9 | L | ORURTOTAL |
| **AMOUNTS FOR NFY 2036-037** | | | | | | | | | | | | | | | | | | |
| TULSIPUR | DANG | 415 | 5 | 40 | 10 | 104 | 48 | 0 | 54 | 0 | 676 | | | | | | | | |
| DEOKHURI | DANG | 333 | 0 | 14 | 112 | 264 | 34 | 100 | 83 | 0 | 940 | | | | | | | | |
| KHALANGA | PYUTHAN | 199 | 0 | 111 | 8 | 127 | 22 | 7 | 6 | 0 | 150 | 693 | | | | | | | | |
| LIWANG | ROLPA | 98 | 53 | 119 | 0 | 5 | 9 | 59 | 0 | 200 | 543 | | | | | | | | |
| GHORahi | DANG | 463 | 0 | 99 | 204 | 342 | 2 | 7 | 17 | 77 | 1211 | | | | | | | | |
| KHALANGA | SALLYAN | 121 | 66 | 97 | 7 | 0 | 0 | 17 | 0 | 0 | 308 | | | | | | | | |
| **SUBTOTAL** | | 1629 | 124 | 480 | 341 | 842 | 115 | 259 | 154 | 427 | 4371 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| **AMOUNTS FOR NFY 2037-038** | | | | | | | | | | | | | | | | | | | |
| TULSIPUR | DANG | 255 | 0 | 62 | 30 | 202 | 11 | 13 | 0 | 573 | | | | | | | | | |
| DEOKHURI | DANG | 253 | 0 | 43 | 21 | 50 | 48 | 67 | 47 | 0 | 529 | | | | | | | | |
| LIWANG | ROLPA | 129 | 11 | 94 | 0 | 0 | 36 | 0 | 4 | 312 | | | | | | | | | |
| GHORahi | DANG | 358 | 0 | 107 | 40 | 272 | 24 | 6 | 39 | 30 | 876 | | | | | | | | |
| KHALANGA | SALLYAN | 112 | 8 | 115 | 13 | 0 | 0 | 10 | 0 | 0 | 258 | | | | | | | | |
| **SUBTOTAL** | | 1107 | 19 | 421 | 104 | 524 | 121 | 132 | 86 | 34 | 2548 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| **AMOUNTS FOR NFY 2038-039** | | | | | | | | | | | | | | | | | | | |
| TULSIPUR | DANG | 598 | 0 | 95 | 18 | 0 | 8 | 40 | 214 | 0 | 973 | | | | | | | | |
| LIWANG | ROLPA | 130 | 40 | 106 | 0 | 12 | 12 | 98 | 8 | 0 | 406 | | | | | | | | |
| MUSIKOT | RUKUM | 0 | 0 | 125 | 30 | 0 | 9 | 9 | 0 | 0 | 172 | | | | | | | | |
| GHORahi | DANG | 281 | 0 | 294 | 85 | 135 | 49 | 101 | 270 | 0 | 1215 | | | | | | | | |
| DEOKHURI | DANG | 355 | 10 | 127 | 61 | 32 | 30 | 96 | 24 | 0 | 735 | | | | | | | | |
| KHALANGA | PYUTHAN | 221 | 2 | 144 | 0 | 20 | 10 | 508 | 26 | 0 | 931 | | | | | | | | |
| KHALANGA | SALLYAN | 288 | 37 | 201 | 16 | 37 | 0 | 96 | 0 | 0 | 675 | | | | | | | | |
| **SUBTOTAL** | | 1873 | 89 | 1092 | 210 | 236 | 118 | 947 | 542 | 0 | 5107 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| **AMOUNTS FOR NFY 2039-040** | | | | | | | | | | | | | | | | | | | |
| TULSIPUR | DANG | 779 | 1 | 202 | 93 | 357 | 78 | 347 | 117 | 0 | 1974 | | | | | | | | |
| LIWANG | ROLPA | 284 | 98 | 336 | 108 | 29 | 48 | 233 | 24 | 0 | 1160 | | | | | | | | |
| MUSIKOT | RUKUM | 130 | 23 | 77 | 0 | 19 | 7 | 101 | 0 | 0 | 357 | | | | | | | | |
| GHORahi | DANG | 889 | 0 | 187 | 760 | 518 | 339 | 451 | 260 | 0 | 3404 | | | | | | | | |
| DEOKHURI | DANG | 650 | 9 | 263 | 686 | 579 | 116 | 98 | 226 | 0 | 2826 | | | | | | | | |
| KHALANGA | PYUTHAN | 501 | 51 | 245 | 77 | 0 | 10 | 393 | 18 | 0 | 1295 | | | | | | | | |
| KHALANGA | SALLYAN | 449 | 48 | 190 | 49 | 52 | 41 | 157 | 0 | 0 | 986 | | | | | | | | |
| **SUBTOTAL** | | 3682 | 230 | 1500 | 1773 | 1553 | 639 | 1780 | 645 | 0 | 11802 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| **AMOUNTS FOR NFY 2040-041** | | | | | | | | | | | | | | | | | | | |
| TULSIPUR | DANG | 924 | 0 | 261 | 101 | 175 | 73 | 349 | 182 | 0 | 2065 | | | | | | | | |
| LIWANG | ROLPA | 238 | 77 | 319 | 45 | 44 | 22 | 200 | 0 | 0 | 945 | | | | | | | | |
| MUSIKOT | RUKUM | 125 | 44 | 323 | 0 | 1 | 4 | 158 | 0 | 0 | 655 | | | | | | | | |
| GHORahi | DANG | 1638 | 27 | 434 | 545 | 674 | 269 | 466 | 75 | 0 | 4128 | | | | | | | | |
### NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION

Table 8-4: Rapti Project Agricultural Credit: All Loan Amounts (Continued) (000's Rps)

<table>
<thead>
<tr>
<th>OFFICE</th>
<th>DISTRICT</th>
<th>AGRIC.</th>
<th>HORT.</th>
<th>LIVSTK</th>
<th>INPUTS</th>
<th>EQUIP.</th>
<th>IRRIG.</th>
<th>INDUST</th>
<th>BIOGAS</th>
<th>L&amp;S</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEOKHURI</td>
<td>DANG</td>
<td>814</td>
<td>9</td>
<td>346</td>
<td>354</td>
<td>629</td>
<td>128</td>
<td>186</td>
<td>116</td>
<td>0</td>
<td>2582</td>
</tr>
<tr>
<td>KHALANGA</td>
<td>PYUTHAN</td>
<td>537</td>
<td>9</td>
<td>340</td>
<td>41</td>
<td>54</td>
<td>88</td>
<td>235</td>
<td>0</td>
<td>0</td>
<td>1304</td>
</tr>
<tr>
<td>KHALANGA</td>
<td>SALLYAN</td>
<td>403</td>
<td>73</td>
<td>307</td>
<td>0</td>
<td>54</td>
<td>61</td>
<td>285</td>
<td>0</td>
<td>0</td>
<td>1183</td>
</tr>
<tr>
<td>** SUBTOTAL **</td>
<td></td>
<td>4679</td>
<td>239</td>
<td>2330</td>
<td>1086</td>
<td>1631</td>
<td>645</td>
<td>1879</td>
<td>373</td>
<td>0</td>
<td>12862</td>
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| TULSIPUR | DANG     | 1221   | 107   | 107    | 129    | 347    | 96    | 114    | 104    | 0   | 2225  |
| LIWANG  | ROLPA    | 106    | 63    | 341    | 107    | 37     | 23    | 68     | 0      | 0   | 745   |
| MUSIKOT | RUKUM    | 113    | 4     | 144    | 6      | 22     | 15    | 149    | 0      | 0   | 453   |
| GHORAH | DANG     | 783    | 2     | 270    | 497    | 16     | 91    | 213    | 2      | 0   | 1874  |
| DEOKHURI | DANG     | 663    | 0     | 182    | 186    | 16     | 4     | 89     | 32     | 0   | 1175  |
| KHALANGA | PYUTHAN  | 33     | 3     | 373    | 25     | 42     | 2     | 75     | 0      | 0   | 553   |
| KHALANGA | SALLYAN  | 17     | 68    | 134    | 148    | 0      | 23    | 137    | 0      | 0   | 527   |
| ** SUBTOTAL ** |           | 2936   | 247   | 1554   | 1098   | 480    | 254   | 845    | 138    | 0   | 7552  |
| ** TOTAL ** |           | 15906  | 948   | 7377   | 4612   | 5266   | 1892  | 5842   | 1938   | 461 | 44242 |

community's non-institutional borrowing needs. The Organizer assists in credit application and monitors credit usage to minimize diversion. Where possible credit is provided in kind.

The Project Paper, as noted above, did establish quantitative targets for SFDP. There were expected to be established by this time, at least five SFDP units each with 40 SFDP groups of 10 to 15 farmers. Accomplishments to date are eighteen SFDP units, with a total of 127 SFDP groups and some 2,500 participating farmers. ADB/N plans to add five more SFDP units in the current year. The shortfall in numbers of members and groups is reportedly due to a decision to focus on firmer establishment of fewer groups rather than multiplication of shaky ones. The decision to establish more SFDP units than originally contemplated sounds like a wise institutional decision that will increase both potential program outreach and the amount of supervision the group organizers can provide to their clientele. SFDP staffing in the Zone in the FY 1985 has risen to 24 non-gazetted officers and 14 other staff.

SFDP lending from FY 1982 to 1985 (first half) by program and district and by subsectoral area are reflected in the Table 8-5 and Table 8-6 shows program achievements and the gender of groups and members, as well as other community activities of established groups. As noted above, these are largely limited to community savings; essays into other areas seem to be limited to the older established groups, at least as reflected by official project documentation.

However, reports prepared by three SFDP groups in Dang and interviews, with group in Rolpa indicated unreported group involvement in training center and latrine construction, road and school improvement activities, and afforestation. Group savings, incidentally, were double those in project records.

Repayment rates for SFDP programs are consistently reported higher than those for the general ADB/N program, and usually above 100 percent with early payment given as the reason. Project records of repayments made and payments overdue as proportions of annual lending are given in Table 8-3. The three SFDPs united reported overdue loans at 10-15 percent of outstanding amounts.

Small farmer training has also been carried out under the program. Person-days of SFDP training, by location, year, and subject area, are given in Table 8-7.

G. Conclusion

The ADB/N general and SFDP program appear to be successful ones. The impression conveyed by a number of interviews with ADB/N and ADB/N/SFDP staff in a variety of locations is one of a strong, well-managed institution with an encouraging number of dedicated, competent, and enthusiastic staff. Staff training is generally adequate and well-designed according to most informants.
## Table 8-5: Rapti Project Agricultural Credit: SFDP Loan Amounts (000's Rps)

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### Footnotes
- AMOUNTS FOR NFY 2038-039
- AMOUNTS FOR NFY 2039-040
- AMOUNTS FOR NFY 2040-041
- AMOUNTS FOR NFY 2041-042

### Notes
- Distinct inputs as per the table's structure.
**NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION**

Table 8-5: Rapti Project Agricultural Credit (SFDP Loan Amounts) (Continued) (Q00's Rps)

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**Benifit to income ratio**
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Table 8-7: Small Farmer Development Training Program
(Person days of training)

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NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION
Expansion of the regular ADB/N credit program and of the SFDP program in Rapti Zone has been impressive and appears to have laid the groundwork for the further expansion in the future that is being planned by ADB/N. Beneficiary impact of both credit programs seems satisfactory, and in the case of the SFDP perhaps remarkable. In the three SFDPs interviewed more extensively, the initial group organizer’s survey found between 69 percent and 90 percent of the group area’s household to be small farmer families. Of the latter, 20 percent, 37 percent, and 42 percent were represented by membership in the SFDP group. These are significant percentages of target group for a supervised credit program, and if the expansion continues at the present rate to additional village panchayats, a perceptible Zonal impact in terms both of credit and participation should be manifest. However, only a small proportion of ADB/N lending is being directed at the high priority of increasing cereal and pulse production. Currently, ADB/N’s branches are able to reach out to only a small proportion of villages of the Zone.

Two other problems should be identified. First, while there are a number of women’s groups organized under the SFDP, and there are additional women in a few cases integrated into other groups, women are still under-represented in the SFDP beneficiary profile. This is true not only in general, but most particularly in project areas where, by reason of outmigration to India, women are left heading often a great majority of local households. (See in this connection the PCV report appended to Annex 11.)

Second, the ADB/N program generally and the SFDP particularly must be very expensive programs to run, although there is no doubt variation depending on the size and maturity of local programs. The ADB/N manager in Rolpa estimated that management costs of the SFDP ran to 20 percent of program value. This is not too surprising where loans are recorded as low as Rs. 50 ($3). Considered more globally, the ratio is confirmed. Project documentation indicates that, from the beginning of project involvement in SFDP through mid-FY 1985, it cost Rs. 1,552,000 (entirely AID-financed, mostly salaries, rent, furniture, travel, some construction and training) to administer Rs. 8,714,000 lending. That represents a ratio of 18 percent of program cost, entirely consistent with the Rolpa estimate.

ADB/N/Kathmandu claims that the SFDP is now basically self-sufficient, if farmers pay back their loans. However, even if repayment rates were 100 percent (which they probably are not and surely will not exceed for long), these administrative costs are not going to be covered by the 10 to 15 percent interest rates the program tends to charge. Therefore, replicability and sustainability of the program are called into question.
In the real world, of course, there may very well be no lack of donors willing to provide assistance to an RLDC like Nepal, particularly through an effective implementing agency like the ADB/N, and especially for programs of the appealing equity impact of the SFDP (or indeed the general portfolio). If this be the case, the replicability arguments that would be routine in aid project analysis are academic here and not worth pursuing.

The ADB/N regular and SFDP programs are making useful and growing contributions to the socioeconomic development of Rapti Zone. However, ADB/N is a national and not a zonal institution, with nationwide programs and donor assistance on a nationwide basis, e.g., from the Asian Development Bank. Similarly, its SFDP is a nationwide program, also receiving donor assistance on a nationwide basis, e.g. from FAO and UNICEF. There is no intrinsic reason why continued successful ADB/N/SFDP contributions to development of the Rapti Zone need to be financed under the Rapti Project rather than by the national programs and national donors (to each of whom the U.S. is a major contributor). If these donors are not willing or able to maintain levels of activity in the Zone at desired rates of increase, perhaps the Project might allocate funding through these national-level donors, for them to manage, thereby at least simplifying somewhat the Project’s management burden. Continued expansion of agricultural credit will be necessary under the recommended follow-on project. However, close USAID/HMG/Donor cooperation should permit necessary lending and SFDP program activity levels in the Zone outside of the framework of the Project per se.

H. Recommendations

- The agricultural credit system in the Zone should be designed to facilitate farmer access to credit in the villages, with increased priority to loans for cereal, pulse, fodder and horticultural production;

- The ADB/N’s regular and SFDP programs should be continued, but they should be financed, or at least managed, by the national programs and national donors. If close USAID/HMG/donor coordination cannot be achieved and the expansion of volume, geographical outreach, and sub-sectoral breadth of agricultural credit and SFDP activity necessary to achieve the purposes of the follow-on project cannot be obtained without direct project funding, this recommendation should be reconsidered; and
ADB/N should hire women staff and, particularly, Women Group Organizers (GOs) under the SFDP. Wives of some of the present GOs might be recruited and couples recruited in the future. The more realistically modest educational requirements for GOs should avoid replicating the difficulties experienced in the Production Credit for Rural Women (PCRW) program. Finally, serious consideration should be given to genuine integration of the PCRW and SFDP programs (see Annex II).
Summary of APROSC Monitoring and Evaluation Study on the SFDP Nationwide

The Small Farmer Development Programme in Nepal has been considered a relatively successful innovation in effectively reaching the target group and delivering credit and services to small farmers and disadvantaged better their economic and social status. The government has fully recognized the potential of the programme as a means of achieving the development objectives set out in the Seventh Plan and accorded a high priority for the expansion of the programme.

The monitoring and evaluation study of SFDP conducted so far by APROSC reveals that it has made a considerable impact on the life of the eligible participant households. The scope of economic activities of these households have widened, and their household income and standard of living has gone up. Members are said to have benefitted from contract with line agencies and training given under the programme. Total borrowing by farmers from formal sources has increased, but this has not necessarily reduced the level of indebtedness to informal sources because consumption credit needs remain and must be met somehow. The result has been poor repayment performance in many cases. Apparently, the group liability provision did not necessarily help in all cases to maintain good repayment performance. Defaults could be attributed to poor leadership in the group, inability of the households to raise a surplus, either due to an insufficient increase in income, an increase in consumption, or a sudden calamity like crop failure or livestock mortality. It appears that group liability works well if the group is small and leadership strong. The findings of the APROSC study strongly assert that emphasis must be laid upon the formation of informal, self-selected groups of poor or mutual aid groups of like-minded people. These types of groups have scored high in participation and self-reliance having demonstrated a capacity to plan their own activities and to maintain social cohesion and group discipline, thereby enhancing participatory decision-making.

However, the implementing agency has to closely watch the recruitment, training and fielding of right type of GOs, loan repayment records, inter-agency coordination at all levels, the demand for credit under the programme, the development of women groups and the attitude of Panchayat leadership towards the SFDP. Furthermore, the agency must guard against the tendency of the majority of the membership coming from those at the upper end of the eligibility scale.
ANNEX 9

Agricultural Inputs
ANNEX 9

Agricultural Inputs

A. Summary

Targets were met. Despite this, however, the system for the supply of agricultural inputs to farmers in the Rapti Zone was of limited scope and impact. Its capabilities were not sufficient to meet existing requirements of farmers or to support growth in agriculture. The Government should address the issue of mobilizing and supporting private sector distribution, which was recognized two years ago as an urgent problem. A program needs to be established, district by district, for quality seed production and for private sector distribution of seed, chemical fertilizers, plant protection materials, veterinary medicines, and other farm inputs. Extension agents, dealers and farmers need to be trained in the proper use of farm inputs. The program suggested is a five-year effort to restructure and extend the supply system for agricultural inputs to cover at least 80 percent of the villages of the zone effectively.

B. Purpose

The purpose of the agricultural input component was to meet the needs of farmers for production inputs including fertilizer, improved seed, agro-chemicals, and farm tools and equipment.

This activity is related to the main Project component directed at improving farming systems and increasing production of field crops and pulses. It is also related to the broad Project purpose of increasing the availability and use of national delivery systems in the Zone.

C. Background

1. Feasibility Study

The Feasibility Study concluded that from the second year of the project farmers would begin to benefit from the effects of various Project programs, such as improved agricultural extension services, irrigation development, and small farmer credit, and that, therefore, there would be increased demand for improved seed, chemical fertilizers, insecticides, etc. Accordingly, the Study recommended strengthening the capacity of the Agricultural Inputs Corporation (AIC) to satisfy these needs. A four-point program was recommended:

- Upgrade AIC sales offices in Pyuthan and Salyan to sub-branch offices and establish a new sales office in Rolpa;

- Provide additional staff and facilities to the AIC offices to carry out input distribution;
o Provide a 500 MT godown (warehouse) in Ghorahi, one of 200 MT Salyan and another of 200 MT in Pyuthan and three 100 MT godowns in 3 sales centers in Rukum and Rolpa; and

o Provide 25 small godowns of 25 MT capacity at the service center level.1

2. The Project Paper

The PP does not address the question of agricultural inputs directly. It notes that increased local demand will be met through an expanded and improved delivery system within the Zone and to the Zone from the national level including varying numbers of service and sub-service centers for extension, credit and expanded agricultural inputs production, storage and/or processing facilities.2 Provision for input storage is specified in Table 9-1 showing estimated expenditures by year. The table notes a projected expenditure of US$ 1,667,000. on input storage, US$ 895,000 by AID and US$ 772,000 by HMG. One of the important assumptions listed in the Project design's logical Framework for achieving out put targets is that "inputs from external sources (fertilizer, some seed) are provided in timely fashion and adequate quantities."3

3. The Project Agreement

The agreement specifies that approximately US$ 895,000 is to be provided by AID to the Agricultural Inputs Corporation to support the construction of about 1,000 MT of additional input storage facilities in the Zone. The agreement further provided that:

Where possible, construction of these facilities would relate to the establishment of Service Centers and would be coordinated with the HMG/N - USAID supported "Seed Production and Input Storage Project" managed by AIC. HMG/N costs include provision of land for facilities, additional staffing costs and continuation of the input subsidy for the Zone.4

4. The 1983 Special Evaluation

The 1983 Special Evaluation Team recommended a shift of agricultural inputs delivery to private groups or individuals. It insisted that progress should be made in the incentive environment:

1APROSC, Feasibility Study of Rapti Zone IRD Project, 1980.

2pp, p. 8.

3PP, Annex 3, p. 3.

4Project Grant Agreement, Annex, p. 3.
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Source: USAID Projections, based on the PCO's 1985/86 Workplan and Budget.
Improvement in the incentive environment in prices, subsidies, markets, transportation and new local private enterprise development are essential for mobilizing economic activity in the districts. Government involvement in marketing such as agricultural inputs should be sharply reduced. The incentive system for government officials working in rural development requires review for its adequacy and equitable application. 5

In amplification of its recommendation to shift agricultural input delivery to the private sector, the Special Evaluation Team observed that the preference of the government is to intervene in marketing wherever possible; that, for example, the AIC has in many instances failed to deliver fertilizer and seeds when needed; that the dampening effects of the government corporations can scarcely be over emphasized.

In commenting on the evaluation, HMG/N noted its agreement that economic incentives in prices, subsidies, markets, transportation and new local enterprise are essential to mobilize economic activity in the Districts. It also noted that the new policy in the Sixth Plan intends to improve incentives for private businessmen and producers.

D. Description of Activities and Program

1. Organization and Management

AIC's program in Rapti Zone is directed by a Zonal Officer in Ghorahi under the guidance of the Corporation's Director General in Kathmandu. Branch offices in Dang and in each of the Hill Districts operate under the supervision of the Zonal Manager. Coordination with District agricultural programs takes place at the District level, both in terms of annual programming and in terms of longer term planning. AID, for example, worked with the District Panchayats in establishing District Seventh Five Year Plan targets for fertilizer inputs, 1985-90. Project support for agricultural inputs supply is determined by MPLD, PCO, and USAID, in the annual work plans and budgets for the project.

AIC's mandate as a public corporation is as follows:

o To import chemical fertilizers at competitive prices, to maintain adequate stocks and to insure the continuous supply for distribution throughout the country;

o To provide quality seeds for farmers, to conduct seed multiplication programs and to collect, procure and store quality seed for distribution;

o To import and procure locally agricultural chemicals for timely distribution in the country; and

5MTE, p. 5.
To encourage the use of domestically produced tools and implements and also equipment manufactured domestically for distribution to farmers.

2. **Inputs**

   a. **Total Expenditures**

      Total expenditures under this program through June, 1985 are expected to total about Rs 2,700,000 when accounts are cleared (AIC is reimbursed against annual approved budgets and workplan). The 1985/86 budget for AIC amounts to Rs 1.2 million (see Table 9-1).

   b. **Operating costs**

      Operating costs of the Rolpa and Rukum offices were paid by the project along with those of either Salyan or Pyuthan (alternatively, from year-to-year), they totaled Rs 0.9 million through mid-1985.

   c. **Construction costs**

      Construction costs of the program were paid by the Rapti Project. They totaled Rs 1.4 million through mid-1985.

   d. **Office furnishing and training**

      The project has also financed office equipment and furnishings, and training (Rs 0.1 million).

   e. **HMG/N fertilizer subsidies**

      The government's policy during the Sixth five Year Plan, 1980-85, and continuing into the Seventh Plan period was to subsidize the price of fertilizer paid by the Nepalese farmer. In the case of Rapti Zone, at least, the subsidy included two parts: a price subsidy which was the same for all farmers throughout the country and a transportation subsidy for farmers in the Hill areas of Rapti Zone.

      The pricing subsidy in 1984/85 amounted to Rs 2,138.21 per metric ton for Complex fertilizer (20-20-0) procured from the EEC, Rs 2,339.29 for Urea procured from the EEC, Rs 850.96 for Urea (46-0-0) procured with assistance from the Asian Development Bank and Rs 2,635.24 for potash (ADB). The current price to farmers for Complex is Rs 3,250.0 per metric ton (or Rs 162.50 per bag of 50 kg). The current price for Urea, the fertilizer most in demand after Complex, is Rs 3,500 per ton (or Rs 175 per bag). These prices have been maintained by the Government since 1982/83 despite an annual domestic inflation rate of about 10 percent.
The transportation subsidy in Rapti is the cost borne by the AIC in shipping fertilizer supplies to the District Hill capitals (namely, Pyuthan, Libang, Salyan and Musikot). This price varies with distance and destination and mode of transport. During the monsoon season, when tractor transportation to Salyan, Libang, and Pyuthan is not possible, AIC currently pays for transport by porter and pack animal at a cost of Rs 200 per bag. This cost exceeds considerably the selling price paid to farmers. However, during the dry season (seven to eight months) AIC pays on the basis of tractor hauling rates of about Rs 60 per bag. (These transport rates are those paid by AIC to supply Pyuthan. Salyan rates would be the same or perhaps slightly less; those to Libang and Musikot in Rukum would be higher.)

Farmers who live in villages beyond their district capital must pick up fertilizer at the district capital outlet or pay their dealer/trader the transport cost to their village. In most instances, the price subsidy amounts to about 67 percent of the fixed selling price to the farmer. The transport subsidy ranges from about 35 percent to over 100 percent of the selling price. Considering that the government distributed over 5000 tons of fertilizer in Rapti Zone, 1980-85, the total cost of the subsidy in that period amounted to at least 100 percent of the selling price to farmers, or about Rs 20 million.

Fertilizer sales are increasing in the Zone and reached 2,000 tons in 1984/85. Projections in the District Seventh Five Year Plans indicated that, in line with past trends, sales are expected to rise several-fold by 1989/90 to about 6-7,000 tons. If these projections hold, fertilizer distribution by AIC in the Zone during the period 1985-90 would be of the order 20-25,000 tons. At present subsidy rates and prices, the total government subsidy would be of the order of Rs 80-100 million over the five-year period.

3. Outputs

a. Construction of warehousing

Under the program, 1000 MT of new warehouse storage has been provided in Ghorahi, Dang (500 MT), Lamahi, Dang (250 MT), and Salyan, (250 MT). In addition, 500 MT of storage has been rehabilitated in Tulsipur, Dang.

b. AIC branch offices and service centers

Under the program, AIC has expanded its professional staff from 14 to 24 persons. Currently AIC operates its Zonal Office located in Ghorahi, Dang, and eight branch offices in Dang (Ghorahi, Lamahi, and Tulsipur), in Pyuthan (Khalanga), in Rolpa (Liwang), in Salyan (Khalanga) and in Rukum district (Musikot and Chaurjhahari). AIC also participated in a sub-service center office and godown in Bijuwar, Pyuthan.
The AIC offices in Lamahi and Salyan were constructed under the project. All other AIC office space is rented. Operating costs of the Rukum and Rolpa offices and those of Salyan or Pyuthan, alternatively, from year to year, are paid by the Project.

c. Training

The Zonal Director, Mr. Ishwar B. Singh, received short training in the Philippines in 1984. Two training courses with 25 and 23 participants sessions respectively were organized by AIC in Ghorahi and Tulsipur for dealers, cooperative managers and AIC store-keepers on handling and marketing fertilizer.

4. Related Activities

a. Rukum Vegetable Seed Farm

Under the Project, the Rukum Vegetable Seed Farm was established and has been a source of seed distributed by the AIC.

b. Local quality seed production

Opportunities exist for local quality seed production by farmers under contract with AIC, including on block programs as part of the cropping systems program and as part of programs for Small Farmer Development, Production Credit for Rural Women and Household Production Systems.

c. Seed processing facility in Ghorahi

With equipment and technical assistance from the HMG/N-USAID supported Seed Production and Storage Project, a seed processing facility has been established in Ghorahi under AIC management, but is in operative. A small seed storage and processing unit was built in Bijuwar and is expected to be used in 1985/1986.

5. Problems and constraints

a. Seed distribution

AIC is the public agency responsible for improved seed multiplication, storage, supply and distribution. However, AIC was able to supply only a small fraction of the improved seed used in the Rapti Zone. Extension agents and farmers complain that AIC seed often arrived too late and often did not germinate. In addition, AIC only took modest steps to foster local production of high quality seed needed in the Zone (paddy, maize, wheat, vegetable and fruit and fodder tree seeds).
The magnitude of the problem is indicated by the finding that 73 percent of Hill district farmers and 69 percent of farmers in Dang district reported in 1983 that the major reason they did not use HYV grain was that it was not available on time. Farmers and agricultural officials report the situation unchanged in 1985. As a result, farmers in the Zone resorted to purchasing improved varieties from farmers whose quality is not that of certified seed.

b. Fertilizer distribution

Fertilizer distribution to farmers in the zone was not timely. Only a small proportion of farmers in the hill areas were within reach of the delivery system established by AIC. Moreover, AIC frequently supplied the wrong kind of fertilizer. The private sector was not used effectively to distribute inputs. However, AIC has not been able to make it attractive to the private sector to get into farm input supply in a significant way. AIC has very few agricultural technicians in its branch offices. Most of its managers have only a limited knowledge of input use, practices, advantages, and dangers.

A constraint to increasing use of fertilizer was the lack of farm credit for cereal production. Although a part of agricultural strategy, only a small fraction of ADB credits in the Rapti Zone were made available for fertilizer purchase for grain production.

Farmers in the area lack adequate knowledge and understanding of fertilizer use. Farmers did not receive the advice and guidance they need on how to use fertilizer and how to maintain and/or restore soil quality and fertility. In general, farmers use compost and manure widely, sometimes in conjunction with chemical fertilizer. However, the team observed that in many instances composting is not being done properly.

c. Transportation

Poor transportation constitutes a major obstacle both to the effective supply of agricultural inputs and to the marketing of farm goods. Rukum and Rolpa are not served by any roads and rely on porters and pack animals traveling by trail for their supplies. Foot trails are also of major importance in Salyan, Pyuthan and the Hill areas of Dang. The Agricultural Marketing and Pricing Policy study found that favorable market access for villages correlated highly with increased farm production and household incomes. The improvements made in the past five years on the three feeder roads

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from Dang to the Salyan, Rolpa and Pyuthan facilitated access to farm inputs in these districts. Further improvements on these roads are required. Work is also needed to improve major trails (e.g., necessary bridges and civil engineering assistance in difficult areas) to further improve market access in outlying areas of the hill districts during the seventh plan period.

The high subsidy on fertilizer represents a considerable burden on the public treasury which will grow considerably as fertilizer use increases in the Zone, as already noted. The question arises if fertilizer use—which farmers have found profitable to purchase for use on wheat—will continue to be profitable if the Government reduces or removes the subsidy. A World Bank analysis indicates that even if fertilizer costs rose by 46 percent, the marginal benefit cost ratio would still be attractive, and would be even more attractive if removal of subsidies were accompanied by higher producer prices (which have been depressed).

In order to supply fertilizer to Hill districts for wheat cultivation for which planting begins shortly after the end of the monsoon season (since October), AIC transports substantial amounts of fertilizer by porter and/or horse at a cost (to Pyuthan) of about Rs 220/bag. The cost of delivery by tractor hauling is considerably cheaper, about Rs 60/bag. However, delivery of fertilizer before the Monsoon for use five to six months later may require additional grain storage facilities in the hill district headquarters.

E. Measurement of Progress

1. Storage facilities construction and rehabilitation

The program increased AIC input storage facilities by 1,000 MT the amount targeted in the project agreement.

2. Establishment of AIC offices/facilities in the Hill Districts

AIC established professionally staffed branch offices in the Hill Districts. AIC professional/technical staff in the Zone increased from 14 to 24 persons.

3. Facilities at rural service centers

Construction of storage facilities was not related to the establishment of rural service centers; service centers are still largely in the planning and design stage (see Annex 18).

Approximately 75 percent of the roads have been widened, with gentler slopes and improved curve design for tractor and jeep use.
4. Local seed production

Modest efforts were made by AIC to develop local production of quality seed by private growers for premium prices (10-30 percent above market price). In 1984/85, AIC contracted with 45 farmers in Dang District for 90 MT of wheat seed; in Pyuthan District AIC contracted for wheat seed production from a group of women farmers (whose production unfortunately was damaged by rust). However, the quantities produced were a very small percent of needs.

5. Improvement of agricultural input supply

In 1984, at the suggestion of USAID advisor, Mr. Eugene Philhower, AIC agreed to several modest measures designed to improve distribution of fertilizer to the Hill areas:

- The Zonal Manager of AIC was authorized to distribute fertilizer to Hill villages rather than to the District Headquarters providing that the transport costs were no greater than the "normal" cost of transporting from Dang to the District's capital; and
- The Zonal Manager was authorized to pay for transport by private farmers from Dang district godowns at Ghorahi or Tulsipur to Hill villagers providing total transport costs did not exceed the "normal" cost of transport to the corresponding District capital.

AIC would store fertilizer at service center godowns and operate them on a part-time basis, and the Rapti Zone was to reimburse the daily allowance and travel allowance for AIC district staff operating these centers.9

6. Use of private dealers/traders and cooperatives

As of mid 1985, AIC was using a few private dealers/traders to distribute inputs, as well as selling directly from its branch offices and sales outlets. Five dealer/traders were present in Pyuthan and five in Rolpa.

The proportion of fertilizer sold directly by AIC as compared to sales through dealers/traders/cooperatives varied in 1984/85 from 50 percent in Saiyan to 50 percent in Dang (see Table 9-2).

The use of private dealers or traders to distribute fertilizer ranged from zero percent of sales in Rukum to 70 percent of sales in Rolpa in 1984/85 (Table 9-2). However, AIC experienced difficulties in establishing a reliable

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9E. Philhower, Letter of July 24, 1984 to the Acting General Manager, AIC.
Table 9-2: AIC, Cooperative and Private Dealer Sales of Fertilizer, 1984/1985

<table>
<thead>
<tr>
<th></th>
<th>Percent thru AIC</th>
<th>Percent thru Dealer/Trader/Coops</th>
<th>Percent thru Private Dealer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>5</td>
<td>75</td>
<td>20</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>15</td>
<td>25</td>
<td>60</td>
</tr>
<tr>
<td>Rolpa</td>
<td>30</td>
<td>--</td>
<td>70</td>
</tr>
<tr>
<td>Rukum</td>
<td>40</td>
<td>60</td>
<td>--</td>
</tr>
<tr>
<td>Salyan</td>
<td>50</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: AIC Zonal Manager, Ghorahi (in a communication dated September 23, 1985).
dealer/trader net work. There difficulties were widely attributed to the inability of the dealers/traders to make sufficient a sufficient project from the business given the modest 5 percent net project on the fixed selling price that AIC allows and the rolpa volume of fertilizer being handled. It was reported that of eight dealers registered in 1983/84 only one remained action in 1985.

7. Distribution of inputs

AIC has expanded its branch office and storage system and is supplying increasing quantities of chemical fertilizer, seeds, plant protection chemicals and farm tools. Chemical fertilizers provided include Complex (20-20-0), urea (46-0-0), compound (15-15-15), potashe (0-0-60), ammonium sulphate and TSP.

8. AIC distribution of fertilizer

AIC distribution of fertilizer increased from 562.65 MT in 1980/81 to 2,054,0 MT in 1984/85, as shown in Table 9-3.

9. AIC distribution of seed

In 1984/85, AIC distributed 48 MT of improved wheat seed, 5 MT of paddy seed, 4 MT of maize seed and 756 kg of vegetable seed (see Table 9-4).

F. Findings

1. The use of improved seed

According to the Rapti Zone Feasibility Study, improved varieties of seeds were to be the key component of the overall crop improvement program. The project aimed specifically to increase acreages under improved varieties to 29,000 ha. in Dang, 8,000 in Salyan, 6,900 in Pyuthan, 4,800 in Rolpa and 4,600 in Rukum, a total of 52,300 ha. Increasing acceptance by farmers was to be encouraged by the conduct of farmer field trials, by dissemination of quality seeds and by local seed multiplication sufficient to meet total farmer demand.

The degree of acceptance and use of improved seed is suggested by data collected the 1983/84 sample survey 1000 rural households10 Nearly 25 percent of these households reported use of improved seed varieties. It may be even more significant that over 20 percent of those households located in areas of poor market access reported using improved seeds (see Table 9-5).

10IDS, op cit., p. 106.
Table 9-3: Type and Volume of AIC Fertilizers Distributed, 1980/81 - 1984/85

<table>
<thead>
<tr>
<th></th>
<th>1980/81 (MT)</th>
<th>1984/85 (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Sulphate</td>
<td>3.75</td>
<td>0.5</td>
</tr>
<tr>
<td>Urea</td>
<td>144.75</td>
<td>402.4</td>
</tr>
<tr>
<td>Complex</td>
<td>368.10</td>
<td>1,635.1</td>
</tr>
<tr>
<td>Potasse</td>
<td>26.40</td>
<td>20.8</td>
</tr>
<tr>
<td>Compound</td>
<td>19.65</td>
<td>4.0</td>
</tr>
<tr>
<td>TSP</td>
<td>--</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Total (MT)</strong></td>
<td><strong>562.65</strong></td>
<td><strong>2,054.0</strong></td>
</tr>
</tbody>
</table>

Source: AIC, Zonal office, Ghorahi, Dang.
Table 9-4: AIC Distribution of Wheat, Paddy, Maize and Vegetable Seed, 1979/80 - 1984/85 (MT)

<table>
<thead>
<tr>
<th>Type of Seed</th>
<th>District</th>
<th>2036/37</th>
<th>2037/38</th>
<th>2038/39</th>
<th>2039/40</th>
<th>2040/41</th>
<th>2041/42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>Dang</td>
<td>45.9</td>
<td>6.1</td>
<td>19.0</td>
<td>91.5</td>
<td>128.3</td>
<td>37.0</td>
</tr>
<tr>
<td></td>
<td>Pyuthan</td>
<td>26.1</td>
<td>0.5</td>
<td>11.0</td>
<td>24.8</td>
<td>11.2</td>
<td>4.1</td>
</tr>
<tr>
<td></td>
<td>Rolpa</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>9.3</td>
<td>0.1</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td>Rukum</td>
<td>2.7</td>
<td>7.8</td>
<td>1.2</td>
<td>1.6</td>
<td>0.8</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>Salyan</td>
<td>5.1</td>
<td>0.2</td>
<td>2.4</td>
<td>3.9</td>
<td>2.5</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>80.0</td>
<td>14.6</td>
<td>32.5</td>
<td>133.1</td>
<td>142.9</td>
<td>48.2</td>
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</table>

<table>
<thead>
<tr>
<th>Type of Seed</th>
<th>District</th>
<th>2036/37</th>
<th>2037/38</th>
<th>2038/39</th>
<th>2039/40</th>
<th>2040/41</th>
<th>2041/42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy</td>
<td>Dang</td>
<td>1.6</td>
<td>1.5</td>
<td>0.9</td>
<td>2.8</td>
<td>7.6</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>Pyuthan</td>
<td>0.4</td>
<td>0.4</td>
<td>--</td>
<td>--</td>
<td>1.1</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>Rolpa</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.4</td>
<td>--</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>Rukum</td>
<td>0.2</td>
<td>0.2</td>
<td>0.9</td>
<td>--</td>
<td>1.0</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>Salyan</td>
<td>0.3</td>
<td>0.1</td>
<td>--</td>
<td>--</td>
<td>1.0</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.5</td>
<td>2.3</td>
<td>1.8</td>
<td>3.2</td>
<td>10.7</td>
<td>5.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Seed</th>
<th>District</th>
<th>2036/37</th>
<th>2037/38</th>
<th>2038/39</th>
<th>2039/40</th>
<th>2040/41</th>
<th>2041/42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>Dang</td>
<td>0.1</td>
<td>0.3</td>
<td>1.3</td>
<td>1.9</td>
<td>0.9</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>Pyuthan</td>
<td>1.7</td>
<td>0.4</td>
<td>1.0</td>
<td>0.8</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>Rolpa</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.7</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>Rukum</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>Salyan</td>
<td>--</td>
<td>0.7</td>
<td>0.2</td>
<td>--</td>
<td>0.4</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.8</td>
<td>1.4</td>
<td>2.5</td>
<td>3.4</td>
<td>3.3</td>
<td>4.1</td>
</tr>
</tbody>
</table>

2039/40 2040/41 2041/42
1982/83 1983/84 1984/85
(KG.)

<table>
<thead>
<tr>
<th>Vegetablea</th>
<th>District</th>
<th>2039/40</th>
<th>2040/41</th>
<th>2041/42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>209</td>
<td>164</td>
<td>491</td>
<td></td>
</tr>
<tr>
<td>Pyuthan</td>
<td>3</td>
<td>4</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Rolpa</td>
<td>209</td>
<td>20</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Rukum</td>
<td>30</td>
<td>8</td>
<td>232</td>
<td></td>
</tr>
<tr>
<td>Salyan</td>
<td>--</td>
<td>1</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>451</td>
<td>197</td>
<td>756</td>
<td></td>
</tr>
</tbody>
</table>

---

*aDistribution of vegetable seed began in 1982/83.*

Source: USAID/Nepal Briefing Book, August 1985, except for 2041/42 for which data supplied by the AIC Zonal Manager in Dang.
Table 9-5: Percentage of Farmers Using Improved Seed in Rapti Zone

<table>
<thead>
<tr>
<th>Areas of Best Market Access</th>
<th>Areas with Poor Market Access</th>
<th>Total Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>39.8</td>
<td>22.5</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>61.0</td>
<td>48.9</td>
</tr>
<tr>
<td>Rolpa</td>
<td>na</td>
<td>10.6</td>
</tr>
<tr>
<td>Rukum</td>
<td>na</td>
<td>35.1</td>
</tr>
<tr>
<td>Salyan</td>
<td>20.0</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total Zone</strong></td>
<td><strong>40.9</strong></td>
<td><strong>24.7</strong></td>
</tr>
</tbody>
</table>

Source: IDS, *Agricultural Marketing and Price Policy*, Table 3.16A.
Most of the improved seed used in is wheat and to a lesser extent in paddy. Improved HYV of wheat were first introduced into Rapti Zone by farmers importing varieties from India starting in about 1975/76. The Project however, helped increase the use of improved seed and introduced new varieties.

The extent to which AIC was instrumental in promoting the trend to increased use of improved seed varieties is unclear. Other factors were important such as the Pre-Production Verification Trials which have been continuing for the past five years, the work of the ICP in Chaurjauri, and the work of the agricultural extension agents. However, currently and in recent years, AIC grain seed deliveries did not provide effective support to the program. The objective of local multiplication of quality seed requirements was not achieved.

Vegetable seed production is discussed in Annex 4.

2. Fertilizer distribution and use

The amount of fertilizer supplied to the Zone and distributed through AIC branch offices, cooperatives and dealers increased several-fold from less than 600 MT in 1980/81 to over 2000 MT in 1984/85. In addition, some farmers from the Zone, particularly from Pyuthan and Dang, purchased fertilizer in Butwal and Nepalgunj.

The bulk of fertilizer distribution by AIC was in Dang district, where market access is most favorable and where most land is under cultivation. AIC reports fertilizer sales in Dang in 1984/85 of 31,390 bags. Farmers bought mainly in cash in amounts ranging from 10 kg to as much as 2 tons (40 bags) with the average sale being about 100 kg (two bags). Most sales took place in four villages, namely Ghorahi, Lamahi, Lamartiya and Tulsipur. (Dang has 39 villages.) Assuming conservatively that fertilizer sales to farmers and landholders amounted to 30,000 bags, that half went to very large landholders who purchased on the average 40 bags each, and that half went to smaller farmers who purchased on the average two bags each, the total number of farmers purchasing and using fertilizer is estimated at 7,850. Dang has roughly 48,000 farmers so that this conservative calculation leads to an average for the District of 15 percent of farmers using fertilizer in 1984/85. The use in Ghorahi, Lamahi, Lamartiya and Tulsipur was much higher. According to a village panchayat chairman adjoining Ghorahi, about half the farmers there were using some chemical fertilizer. These rough estimates are in accord with the household survey previously cited, which indicated that 44 percent of rural households in the most-favored market access areas in Dang were using fertilizer (in 1983/84) while only 4.8 percent in the poor market access areas were.

In 1984/85, AIC in Pyuthan distributed 2450 bags of fertilizer. According to the AIC branch office manager, purchases by farmers ranged from a low of 5 kg to a high of 2 quintals (4 bags), with the average being about one-half bag (25 kg). Most of the sales were to farmers
located near either the Pyuthan headquarters office in Kalanga or the Bijuwar sales office. The AIC branch manager estimated that three quarters of the sales took place in eight villages (Pyuthan has 49 villages). A rough but conservative estimate along the lines of the one for Dang in the above paragraph indicates that between 2,500 and 3,000 farmers purchased at least a small amount of fertilizer. The total number of farmers in Pyuthan is about 35,000, suggesting that seven to eight percent of the farmers in the district purchased some fertilizer in 1984/85, with much higher percentages in and around Bijwar and Pyuthan Kilanga and much lower in outlying villages. According to the 1983/84 household survey, 42.4 percent of farm households near Pyuthan, Kalanga and Bijuwar used some chemical fertilizer compared to 5.4 percent in outlying (poor market access).

Table 9-6 shows that a significant percentage of farmers in a few favored areas are using chemical fertilizers in Dang and Pyuthan. In addition, about eight to nine percent of farmers in Salyan use chemical fertilizer. The percentages of farmers using fertilizer in Rolpa and Rukum is low.

The crop production strategy for the Project envisaged the use of chemical fertilizer on paddy, wheat and maize, which together account for about 90 percent of the land cultivated in the Zone. In practice, farmers mainly use fertilizer on wheat. While agricultural data on areas cultivated, yields and crop production are generally poor, they do suggest increasing yields and production of wheat in the Zone in contrast to a trend in the past decade towards decreasing yields of paddy and maize (and declining overall per-capita crop production, despite estimated increases in land under cultivation of 1-1.5 percent per year). The decline in yields for maize and paddy appears due to declining soil fertility of older, established fields and to poorer lands being brought into production. Data is not available to assess to what extent use of improved varieties of paddy and maize combined with better cultural practices may be redressing the situation.

G. Conclusions

Original Project targets for construction of additional storage and for strengthening AIC’s organization in the Zone were achieved.

The objective of assuring an effective system for local production of adequate quantities of improved grain seed has not been achieved. The existing quality seed distribution by AIC is insufficient to meet farmer needs.

The supply of fertilizer by AIC increased steadily over the period 1980-85. Farmers in localized areas used it profitably with good impact on wheat production and yields. However, fertilizer distribution was plagued by poor planning and scheduling. Too many instances occurred in which the wrong kind of fertilizer was delivered in the wrong amounts too late for timely use. Despite a strong
Table 9-6: Proportion of Farmer Household Reporting Use of Chemical Fertilizer (Percent)

<table>
<thead>
<tr>
<th>District</th>
<th>Good Market Access</th>
<th>Favorable Access</th>
<th>Poor Market Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>48</td>
<td>31</td>
<td>4.8</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>25</td>
<td>12.3</td>
<td>5.4</td>
</tr>
<tr>
<td>Rolpa</td>
<td>na</td>
<td>13.4</td>
<td>4.0</td>
</tr>
<tr>
<td>Rukum</td>
<td>na</td>
<td>34.0</td>
<td>1.1</td>
</tr>
<tr>
<td>Salyan</td>
<td>9.4</td>
<td>8.7</td>
<td>8.6</td>
</tr>
</tbody>
</table>

recommendation by the 1983 Special Evaluation team to AIC, endorsed by HMG, to make greater use of the dynamism of the private sector, AIC resisted action to accomplish this. The recommendations of the USAID-financed evaluation of agricultural inputs provision published in November, 1983 also were ignored. (The Director General of AIC did indicate to the present team that a policy change would be approved soon.)

It is urgent to restructure and extend the supply system in Rapti Zone by increasing use of private dealers/traders who are enabled to operate at reasonable profit margins. This will help provide the increasing quantities of fertilizer forecast for distribution over the next five years and solve the difficult problem of distribution to outlying villages where market access is poor.

Measures to improve market access such, as improved trails, will have a major impact on demand for agricultural inputs by Rapti farmers. Farmers need advice on the proper use and application of chemical fertilizer to achieve good response and at the same time to protect soil fertility. They also need advice on how to improve composting to increase its fertilizing and soil building effects, and how to use compost and manure in association with fertilizer.

Fertilizer use was largely restricted to wheat. Very little was used for maize and paddy production. Extension service recommendations for the use of chemical fertilizer for paddy and maize need to be reviewed and reformulated. Farmers did not receive adequate guidance on plant protection measures and extension workers need training in this area.

Veterinary supplies and medicines are usually in short supply in the hills and usually not available on the private market.

H. Recommendations

- The agricultural supply system in the Zone should be restructured, with major privatization of seed production/distribution and fertilizer distribution;
- The policies and administrative procedures of the AIC should be reviewed and modified where necessary to provide strong incentives to the private sector to participate in the supply of farm inputs to Rapti farmers;
- A program should be drawn up to expand the number of dealers/traders serving the villages of the area;
- District programs should be drawn up by AIC in consultation with ADOs and farmer representatives for local private production of quality seed in sufficient quantities to meet District requirements;
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ANNEX 10

Medium Irrigation
ANNEX 10

Medium Irrigation

A. Summary

The performance of the medium irrigation component of the Rapti Project was disappointing, due not only to contracting and administrative delays, but also to the implementing agency's inability or unwillingness to include social factors in project design or to elicit beneficiary participation. This systemic institutional problem merits Mission address, but not necessarily under this project. Work under this component should be stopped immediately, and subjected to an independent, multi-disciplinary assessment to determine which projects should be terminated and which modified.

B. Background

The medium irrigation component of the Project, defined as covering command areas of 50 to 100 ha in the hills, or larger in Dang District, was included in the Project in support of the farming systems component's productive purposes. The PP called for the Department of Irrigation, Hydrology, and Meteorology (DIHM) alternately to cause "at least an additional 1,250 has of land (to) become fully irrigated," or to bring approximately 1,250 has under new or improved irrigation" by 1986. (This target, and this discussion, exclude the minor irrigation program, managed and evaluated under the Rural Works component.) The number of projects that would achieve this target was specified neither in the Project nor in the Project Grant Agreement, although the latter document reduced the target to 1,000 has of medium irrigation. This reduction in target does not appear to be mentioned in subsequent project documentation.

C. Methodology

The Grant Agreement called for AID to contribute US$ 2,143,000 (and HMG US$ 178,000) to "support the civil works, equipment, staffing and staff training, and operating expenses necessary for the Department to field engineers and carry out this work."

Accordingly, DIHM office facilities in Tultipur were expanded, constructed, and equipped with HMG funding. Additional staff were provided, the filled positions growing from one gazetted (engineer) and nine non-gazetted staff in FY 1981 to six gazetted and 14 non-gazetted officers. Participant training provided to DIHM staff totalled one and one-half person-years; the PP had called for over 12 person-years of mostly long-term academic training for DIHM staff. A certain amount of in-country training was also provided.
D. **Accomplishments**

The 1983 Special Evaluation, which so energetically pointed out other performance shortfalls, ignored the medium irrigation (MI) component of the Rapti project. Perhaps this was because the first two medium irrigation projects were not even approved until September 1983. Construction began on the Dharmabati MI scheme in Pyuthan and the Goberdihia MI scheme in Dang in 1984. These are both rehabilitations of existing, traditional irrigation projects, with gross command areas totalling 877 has. Three more projects totalling 918 has of gross command area were approved in January 1985. These are all new projects rather than rehabilitations. Construction began on two of them in March and July, 1985, but not the last when the Rapti Project extension was limited to one additional year. Summary status of the five projects is given in the following Table 10-1.

E. **Problems**

The difficulties encountered in carrying out the medium irrigation component of Rapti project are very well conveyed in the report prepared for the evaluation team by DIHM, which is appended to this paper as Annex 10-1 and earnestly recommended to the reader. The story of the first two projects, where enough has been done to evaluate, is a familiar one of primary attention to technical feasibility to the substantial neglect of social feasibility analysis; substantial lack of involvement of beneficiaries in project design or implementation; limited concern for future water user association maintenance or water allocation needs and practices; inattention to project disbenefits; an atmosphere not very conducive to cooperation between agricultural and other personnel needed for realizing or maximizing project benefits.

Of the two medium irrigation projects most advanced, the Goberdía project in Dang was inaccessible during the monsoon rains. However, DIHM in Tulsipur noted that the project had been impeded by land problems. Local farmers whose land was needed for canal construction and had not been consulted on the Project were not surprisingly, insisting on compensation, because the canal had to be dug so deep in some locations that the locals would be unable to participate in the irrigation benefits.

The project request form was said to commit farmers to certain performance standards, but no water users association was consulted before project construction, and DIHM had no opinion on how operations, maintenance, and water allocation would be carried out afterward. Similarly, coordination with Ministry of Agriculture personnel was not seen as the responsibility of DIHM, although they expressed the "hope" that it would happen.
Table 10-1: Medium Irrigation Status Report as of August 1985

<table>
<thead>
<tr>
<th>Name</th>
<th>Goberdia</th>
<th>Dharmabati</th>
<th>Belghari</th>
<th>Saibang</th>
<th>Chiregad</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>Dang</td>
<td>Pyuthan</td>
<td>Dang</td>
<td>Rolpa</td>
<td>Dang</td>
<td></td>
</tr>
<tr>
<td>Panchayat</td>
<td>Goberdighi</td>
<td>Bijayari</td>
<td>Bijayanagar</td>
<td>Dubidandid</td>
<td>Dhanauri</td>
<td></td>
</tr>
<tr>
<td>Water Source</td>
<td>Rapti River</td>
<td>Dharmawati</td>
<td>Gugrung</td>
<td>Arung</td>
<td>Chiregad</td>
<td></td>
</tr>
<tr>
<td>Max. Discharge (cumecs)</td>
<td>4100</td>
<td>800</td>
<td>107</td>
<td>38</td>
<td>223</td>
<td></td>
</tr>
<tr>
<td>Min. Discharge (cumecs)</td>
<td>10.0</td>
<td>4.0</td>
<td>0.2</td>
<td>0.6</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Altitude (m.)</td>
<td>250</td>
<td>1200</td>
<td>550</td>
<td>1000</td>
<td>550</td>
<td></td>
</tr>
<tr>
<td>Canal length (m.)</td>
<td>8.5</td>
<td>9.6</td>
<td>11.5</td>
<td>5.0</td>
<td>12.8</td>
<td>47.4</td>
</tr>
<tr>
<td>Canal discharge (cumecs)</td>
<td>1.35</td>
<td>1.02</td>
<td>1.06</td>
<td>0.61</td>
<td>1.15</td>
<td></td>
</tr>
<tr>
<td>No. of structures</td>
<td>34</td>
<td>23</td>
<td>107</td>
<td>19</td>
<td>97</td>
<td>280</td>
</tr>
<tr>
<td>Gross area (ha.)</td>
<td>500</td>
<td>377</td>
<td>344</td>
<td>220</td>
<td>354</td>
<td>1795</td>
</tr>
<tr>
<td>Net area (ha.)</td>
<td>455</td>
<td>340</td>
<td>327</td>
<td>209</td>
<td>336</td>
<td>1667</td>
</tr>
<tr>
<td>Total cost (Rps.)</td>
<td>5,200,000</td>
<td>5,300,000</td>
<td>8,070,000</td>
<td>6,870,000</td>
<td>7,570,000</td>
<td>33,010,000</td>
</tr>
<tr>
<td>Construction cost</td>
<td>4,300,000</td>
<td>4,200,000</td>
<td>6,900,000</td>
<td>5,700,000</td>
<td>6,400,000</td>
<td>27,500,000</td>
</tr>
<tr>
<td>Establishment cost</td>
<td>900,000</td>
<td>1,100,000</td>
<td>1,170,000</td>
<td>1,170,000</td>
<td>1,170,000</td>
<td>5,510,000</td>
</tr>
<tr>
<td>Present Cropping Intensity</td>
<td>1.28</td>
<td>2.00</td>
<td>1.40</td>
<td>1.36</td>
<td>1.40</td>
<td></td>
</tr>
<tr>
<td>Future Cropping Intensity</td>
<td>1.75</td>
<td>2.67</td>
<td>1.69</td>
<td>2.27</td>
<td>1.86</td>
<td></td>
</tr>
<tr>
<td>Benefit/Cost @ 10%</td>
<td>1.43</td>
<td>1.34</td>
<td>1.79</td>
<td>2.37</td>
<td>2.41</td>
<td></td>
</tr>
<tr>
<td>Internal Rate of Return I</td>
<td>19.80</td>
<td>16.06</td>
<td>22.01</td>
<td>32.46</td>
<td>33.00</td>
<td></td>
</tr>
<tr>
<td>Approval Date</td>
<td>Sept-83</td>
<td>Sept-83</td>
<td>Jan-85</td>
<td>Jan-85</td>
<td>Jan-85</td>
<td></td>
</tr>
<tr>
<td>Construction Complete</td>
<td>Sept-86</td>
<td>Sept-86</td>
<td>June-87</td>
<td>Mar-88</td>
<td>June-87</td>
<td></td>
</tr>
</tbody>
</table>
The Evaluation Team did have an opportunity to visit the Dharmabati MI scheme in Pyuthan and discuss the project with local farmers and civic leaders as well as DIHM personnel. The impression received was of earnest and conscientious engineering staff having more success with technical problems than with the social factors ignored in the original project design. (Please see the DIHM account in Annex 10-1.)

The project is a rehabilitation of not one but five traditional irrigation systems affecting four panchayats. Each system, with its own water users association, had had its own separate intake from the river, which would regularly wash out during the high water of the monsoon, precluding irrigation and a third crop during that season. The project idea is to unify the five systems with a single permanent intake at the top of the system, at the same time installing modest rock-and-wire flood control structures along the river to halt erosion of productive farm land in the command area.

Among the social problems identified in the discussions were:

- The canal alignment was dug at too low a level to benefit certain farmers, who presumably had participated in the original system;
- The flood control works were much desired, but might also serve to protect the original intakes of the pre-existing system, the need for annual replacement of which was a major rationale for the project;
- The course of the new canal coincides in part with the trail by which farmers have always brought their cattle to the fields; and
- The farmers are afraid that getting water from one canal as opposed to five will not provide enough water; the outlets look small to them. This fear is not unfounded, since the engineering estimate is that the total water flow will be reduced from some 5 cubic meters per second from the existing systems to only 1.02 cubic meters under the improved system.

The engineering response is that 1.02 cumecs is in fact plenty of water because much of the water is customarily wasted. However, the reason for that wastage seems to be a strong local farmer preference for "cool" water coming directly from the river and canal, rather than "warm" water runoff that has been standing in some other farmer's field. This in turn is no mere irrational superstition; the "cool" water is in fact rich in silt which is a major means of increasing soil fertility. Additionally, the larger channel's flow of water is traditionally used to carry significant amounts of silt into the land during pre-monsoon flooding.
The engineer in charge on site has proposed a number of socially-oriented solutions, none of which has yet been approved, including strengthening the five traditional intakes along with the proposed project main intake. However prospects remain cloudy. The five traditional systems had functioning user associations; one indeed had had the clout to compel the closure of an ADB-financed, water-powered textile loom operation an entrepreneur had installed on their canal, so as not to interrupt the flow of water. These water users had been accustomed to performing the maintenance, paying the costs, and sharing the water from their own traditional systems. Now the farmers' view is, they told us, HMG is building this canal and HMG can maintain it. In any case, the operation of the unified system may well be beyond the management capacity of any local group which might be but has not yet been formed.

The other three medium irrigation projects, which are new ones and have no water user association tradition at all, are likely to have at least as difficult a time with these social issues.

F. Conclusions

The medium irrigation component of the Rapti project has fallen victim not only to the usual contracting and start-up problems that affected other elements (and in themselves call into question administrative feasibility), but also to other serious institutional shortcomings in the implementing agency. These shortcomings have to do with the need to link social with "hard" science in irrigation water management, and are unique neither Rapti Zone nor to Nepal. We see no reason to seek a zonal solution. Of the five medium irrigation projects, the team saw only one and it was dismal. We heard nothing to provide grounds for greater optimism on the other four.

G. Recommendations

The USAID/Nepal Irrigation Management project (0153) beginning this year is USAID's nationwide approach to the institutional problems described above. This is entirely appropriate. Mission management should take energetic steps to ensure that the necessary share of attention and resources from that project is directed to the irrigation management needs of the Rapti Zone.

As far as the Rapti Project per se is concerned:

- The Mission should promptly contract, under Project funding, a thoroughly independent, multi-disciplinary assessment team to study the five approved projects, in order to review social, economic, technical, financial, and legal aspects of project completion, termination, or modification; No further funds should be obligated for these projects pending the outcome of the study:
In order to minimize any disruptive implications of suspending construction activity, the team recommends that the study should be completed before the onset of the next construction season in February 1986. All work on and expenditures under the medium irrigation component should be suspended immediately;

Any recommended continuation of these medium irrigation projects whose implementation runs beyond FY 1986 should be transferred with available funds to the new bilateral Irrigation Management Project, which is offering institution-building to DIHM, for monitoring and implementation; and

Any further project-funded irrigation activity should be limited to such DTO-managed minor irrigation projects as can mobilize prior and full community support, e.g., CARE and other SFDP-funded initiatives and loan-funded tubewell or other ADB-sponsored programs. The groundwater potential of the Dang and Deokhuri valleys should be inventoried and developed, but under some project other than this one.
ANNEX 10-1

Report Prepared by DIHM for the Evaluation Team on Medium Irrigation Projects Undertaken by the Rapti Project

To
The Members
R1RDF Evaluation Team

September 8, 1985

Hearty Welcome!

Dear friends:

It is my pleasure to make you familiar with the present position of medium irrigation projects under R1RDF programme. The programme had been formulated to irrigate 1250 ha of agriculture land of Rapti Zone with 32.7 million of Rupees by the end of Sixth five year plan. But we could not achieve the target. However I feel the experience of the failure in the past would accelerate the pace of development in the years to come.

Here I would like to mention some of the problems of delayed progress at the beginning of the implementation of the project. Firstly it is inexperienced manpower without clear concept of RIRD programme. Secondly, almost all of the engineers and overseers are just newly appointed in temporary basis. They are still working in temporary posts deprived of many HMG facilities and uncertainty of job. Thirdly, it is unavoidable bureaucracy in HMG organization making decisions unnecessarily delayed. Last but not the least it is lack of reliable transportation in the project site.

In spite of the above facts my engineers, overseers and other staffs have done commendable job so far.

During sixth five year plan period 37 numbers of projects in five districts of the zone have been studied to different level of investigation. And among them eight number of projects were found to be feasible for construction. Detailed feasibility study and then design and cost estimate for six of the above eight have been completed.

At present four projects, Chiregad Irrigation Project and Belghari I.P. in Dang Valley, and Goverdiha I.P. in Deukhuri Valley, and Dharmabati I.F. in Pyuthan district are under construction, commanding about 1400 ha of land. So far out of total works in above individual projects the progress of 29%, 54%, 80%, and 50% have been achieved, respectively. Saibang Irrigation Project in Rolpa district is going to be constructed in this fiscal year.

Among the above four construction projects, first two projects are going to have totally new irrigation canal system whereas next two are rehabilitation projects with new structure works over the old existing system.
The construction cost per hectre of command areas are going to range from Rs.2400 per ha in new projects and Rs.14,000 per ha in rehabilitation projects.

Response and co-operation from local people in the project are satisfactory, it is rather encouraging in case of new projects. In case of rehabilitation projects arguments for and against the project are common either from politically motivated people or from the people with lack of confidence over the programme. However, now it is certain that quite a good number of farmers have realized the benefit of the project. In Dharmabati they already felt the impact due to the construction of spurs to protect their valuable land from the flood and smooth running of newly built canal in the head reach of the system.

More and more demands for the irrigation schemes from the farmers as well as from people's representative are coming up.

Above all it is past experience which have made us quite confident of the job. It is certain that we would be able to take up quite a good number of more new projects during Seventh Five year plan period. I have herewith attached certain data and brief status reports of the construction projects with schematic maps. I hope, it will be helpful for evaluation works.

Wishing you all happy time here.

Kailash B. Shrestha
Project Chief
RIRDP Irrigation
GOVERDIHA (Badkhapath) IRRIGATION PROJECT.

This project lies on the left bank of Rapti river in Deokhuri Valley of Dang district. The inundation head intake of the canal is at Jethangaon of Goverdiha Village Panchayat which is about 10 km west of Kalakati on national highway.

This project was conceived as rehabilitation of old farmers' canal and was designed the system providing with permanent Head Works, Cross-drainage works, resectioning of canal and distribution structures.

But the year 2038-39 flood in Rapti river eroded the existing canal from chainage 800m to 1400m. The chief engineer, USAID visited the site and approved the proposal of flood protection work and a new alignment of the canal in this reach.

The previous canal system without permanent structures had been running jointly by two village Panchayats, Goverdiha Paraspur. However, the project was formulated at the request of Goverdiha V.P. and by the recommendation of District Panchayat, providing required water for the area of Paraspur village also.

At the time of construction unforeseen problems occurred; the local villagers made the objection over the new alignment of the canal. The average depth of cutting of the canal was 7m to 9m; and to get into that depth the land require as top with of the canal was high. Moreover, the problem of unstable bed of the canal due to flow of ground water, nearness to village settlement, and other problem made us to seek new alternative alignment. And the village Panchayat also made the request for this. However the new alignment of the canal was possible with the addition of flood protection spurs near Mahadewa Village.

Last winter the problem was discussed among the Irrigation Department authorities and Mr. Benjamin A. Stoner, Project Manager (RIRD) USAID. And alternative alignment has been finalized with 1.8 Km of canal length instead of 4 Km in previous alignment along with the required number of spurs on the river bank. The estimate was revised and there was about 15% increased in overall cost.

All the structures, Head Regulator, Cross-drainage works and road crossing has finished completely in last fiscal year. Additional bank protection works as per change in alignment of the canal has completed. So far earth works in the link canal (the new canal) is concerned only 20% of the total quantity has been finished.

Out of about Rs. 4.7 million of contract amount Rs. 3.7 million works has been completed including Rs. 1.8 million of flood protection works in previous fiscal year.
CHIREGARD_IRRIGATION_PROJECT, DANG
STATUS_REPORT

M. Mishra
Project Engineer

This project is situated at Dhanauri Village Panchayat of Dang district. The site is accessible by 14 Km of seasonal motorable road, West of Tulsipur, the zonal head quarter.

Chiregard river is main source of water and Command area lies on the right bank of the river.

The scheme consists of diversion weir as Head Works, main and secondary canals. The system irrigates 350 ha. of cultivated land of different Village Bagaar Rajapur, Passaduha Gaurate etc. At present, except for small patch of land, the cultivation of the area depends on uncertain monsoon rain. Mustard and maize in upland area and Paddy are the only two crops cultivated in the area. It is expected that there will be a change in cropping pattern as well as in its intensity after the Project. About 400 farmers will be benefited economically as well as socially.

Present Status

The tender award for the construction works of the Project was delayed behind the target due to time taken by retendering procedure. However, the earth work for main canal has been started under piece work nomination and 2.25 Km out of 7 Km of main canal has completed in the last fiscal year 041/042. A site office building is also completed. So far the contract for all the works have been awarded and works would be started by November this year. The target for over all completion of the Project has been set to finish by the year 043/044.
Belghari Irrigation Project is located at Panchkule V.P. of Dang district. It commands the cultivated area of the Work 3, 4, 5, and 6 of the panchayat on the right bank of Gurjung Khola. The approach to the site is by 24 km seasonal road West of Tulsipur. Objectives of the project can be described as follows:

(i) To increase the intensity of cultivation of command area by providing regular water supply. Which is at present depends upon uncertain and irregular rain.

(ii) The increase in agriculture production would expect to change the living standard of about 300 farm household families.

(iii) Employment opportunity would be increased locally. The construction works was started on March 1985 only. In spite of short working season the project has achieved the progress of about 28% of the total works. As major works, diversion weir head work, cross-drainage work and digging of main canals are progressing satisfactorily. About 4 Km out of 6.8 Km main canal earth work, six major structure out of nine are in completion stage. I case of head work diversion weir, only super-structure portion is left to be completed.
The progress of the individual works in monetary value is as shown:

<table>
<thead>
<tr>
<th>S.N</th>
<th>DESCRIPTION</th>
<th>ESTIMATED AMOUNT RS. AS PER CONTR.</th>
<th>AMOUNT PAID IN 1000</th>
<th>AMOUNT AGAINST PROGRESS REMARK RATE RS. THE WORK IN % IN 1000 DONE RS. 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>H/W &amp; H/R CONSTRUCTION</td>
<td>1024</td>
<td>819</td>
<td>212</td>
</tr>
<tr>
<td>2.</td>
<td>CONSTRUCTION OF CULVERTS SYPHON ETC.</td>
<td>3557</td>
<td>3053</td>
<td>998</td>
</tr>
<tr>
<td>3.</td>
<td>E/W DIGGING &amp; FILLING IN MAIN CANAL</td>
<td>1215</td>
<td>1040</td>
<td>210</td>
</tr>
<tr>
<td>4.</td>
<td>SITE CLEARANCE, OFFICE ESTABLISHMENT ETC.</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>5.</td>
<td>BUILDING CONSTRUCTION</td>
<td>300</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Bureaucracy in forest clearance work, scarcity of construction materials like cement, lack of transportation facilities for the staff was faced as the major obstacle in the progress. However, by the end of this fiscal year 2042/043, it is expected to complete 90% of major works, and to run water in the canal to irrigate 150 ha. of cultivated area.
Introduction

It is a project conducted to provide modern irrigation facility to 375 hectares of land on Dharmabati, Bijuwar and Bijayanagar Village Panchayat of Pyuthan district. The command area being Valley of Dharmabati river, is fertile in nature and sometimes due to its high agriculture production is called the green area of the district.

Objectives

The project compromises up-grading, renovation & integration of five existing village canals namely Dabargao Khola, Lamchhang Khola, Rani Khola, Gorkha Khola and Kwadi Khola.

The water to these local canals are directly drawn from different parts of the river by raising the water level with some construction (mainly boulders & branches of trees) across the direction of the flow of the river. During flood period, the temporary obstructions are washed out and the uncontrolled entry of flood water occurs. This uncontrolled entry of water erodes the land & canal section in the vicinity of the intake. So, the people have to reconstruct the temporary diversion & eroded bank of the canal every year. As a result of this, they have to do extra labor and the time to be used in the cultivation is diverted to the repairment works. One particular thing to be noted here is that the cultivation of paddy in this area starts before monsoon and is harvested at the end of the monsoon. It is due to the fact that the water cannot be diverted during flood season and the people are compelled to cultivate, the paddy before the interruption due to flood water. Ultimately, this leads the people to cultivate only two crops a year with no compensation of third crop. So, the main object of this scheme, is to create an environment with controlled & regular water supply by means of modern irrigation facility to enable the people to grow a third crop and thereby to multiply the intensity of cropping.

Beginning of the programme

The mountaineous, remote parts of Nepal, are generally facing the problem of shortage of food. Government has to transport the grains give some relief to the food deficit people. In this consequence, it is realized that the permanent solution to this problems is to promote the hill irrigation schemes in order to increase the food production at the spot.

Keeping this fact in mind, this project was investigated in 1981/82 under RIRDIP/Irrigation and the detailed study report was finalized, approved by USAID and HMG in 1982-April-May.
Since the monsoon was going to start and the agency to work is contract system, demanding different procedures to award the work, no construction work could be done in that year.

In the working season of 1983, some canal protection work were done and the contracts for construction of structures, earth work etc. were awarded to the contractor. The actual construction work of canal, earth work started from Feb-March to May-June of 1984 and continued for Feb-March to May-June of 1985. In spite of several difficulties, the progress is satisfactory and the whole construction work is expected to be finalized in this working season of 1985-86.

**Difficulties**

The approach road to the project starts from Ghorahi, district head-quarter of Dang, to the head-work site. This road is 80 Kms long, and passes through high mountaineous alignment with no permanent structures. It is a village road without technical standards and is frequently abruptly by rain and slides. So, the tractors are the only means used to transport the materials during the winter season. Evidently, the working season is from January to early May (before rain) i.e. near about 5 months. If the construction materials are not available in the market during the initial months of winter, this directly affects the construction speed of the project. Secondly, this project being the upgrading, renovation of old existing canals, the time for construction and cultivation frequently coincide and it becomes difficult to continue the work. To interrupt the water going to the cultivated land is not a fair task and to get a time when the land and the canal are vacant for earth work seems to be a matter of change, for example, the paddy is harvested in Aug-Sept. and the land & canal remains vacant for a certain period but it is not the working season-the approach roads are not opened, the laborers are engaged in their own field cultivation. So, the only adjustable matter is to compromise with the farmers and the speed of the work. Thirdly, if the minimum essential to run a project like site-office, quarter, godown, transportation facilities, land acquisition for canal construction and the management of staff are not fulfilled beforehand, then it creates a trouble, some environment and extra energy is to be expended to mobilize the speed of work properly. So, especially in the case of remote mountaineous project like Dharmabati Irrigation project, this fact cannot be overlooked. Again, one thing experienced about this project is that if the people are not familiar with the object and advantages of the project properly, the people develop a sense of confusion and the mutual co-operation, understanding necessary to run a project are underent. In the initial period of the project, this situation happened but it is totally clarified now.
Since the monsoon was going to start and the agency to work is contract system, demanding different procedures to award the work, no construction work could be done in that year.

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**Economical Aspect**

The estimated, contract and expenditure amount of the project are:

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated Construction Amount</th>
<th>Construction Expenditure</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>Rs. 37,52,421.00</td>
<td>Rs. 4,13,145.80</td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td>Rs. 33,39,275.20</td>
<td>Rs. 27,33,854.45</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>do</td>
<td>do</td>
<td>Rs. 16,10,020.40</td>
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</table>

So, the expenditure in construction up to the present date is Rs.20,23,166.20 against the total estimated construction amount of Rs.37,52,421.00. The progress of the last two years has mostly concerned with the establishment, management and collection of essential materials. Actually, the construction work and the establishment work were running simultaneously. Nevertheless, the progress up to the present is above 50% and the other difficulties nearly being overcome, it is expected to complete the whole work by the end of this fiscal year.

**Social Effect**

Though this project has not finished its work and the people have not experienced the full advantages, the positive attitudes towards the Project can be realized now. The situation before two years was that the people were curious to know the activities of the project. The common question was that what is the advantage of taking the existing canals when there is already the irrigation system. The answer of this question is now received by the farmers of the first canal (i.e. Dabargao Khola). The extra labor of 200-250 farmers for 10-15 days every year, for diversion of water and construction of bank, is decreased and they can utilize this time to their cultivated land.

In addition, the problem of soil erosion of the canal the cultivated land has compelled the farmers to think some preventative measures to save their valuable land. The spurs constructed by this project to save the canal, have indirectly helped to reclaim the land washed by the flood. Now, the people request to have more spurs in order to save and reclaim the land washed by the flood.
It is not less important to save the command area from flood in comparison to the irrigation facility going to be given on that command so, it is essential to think about these aspect also.

Besides the flood control work to be included in the project, some modifications, additions to the previous proposals are also felt.

**Suggestions**

From the technical view, the importance of integrating the five canals has its own characteristics. But the environment, method of cultivation, life style and other miscellaneous facts leads to think the proposals in slightly different way.

(I) The total amount of water in the five existing local canals from different intakes is about 5 cumecs. In spite of this, the project with a flow of 2.58 lit/sec/ha (with some additional losses) has proposed to supply 1.02 cumecs of water to irrigate the same command (i.e. 344 hectares). So, the people are getting 1/5 of their previously consumed water from the proposed canal which may arise disappointment in the farmers.

(II) The cause that the water from the proposed canal can be insufficient may be:

(a) The command area has steep slope towards the river. The irrigation water from field channels percolates to the river irrigating a certain patch of land.

(b) The topography, soil condition and percolation rate vary a lot within the same command.

(c) The local farmers have a conception that if the hot water remains in the field, the production will be less. So, they supply continuous cold water to the root of the paddy throughout the growing period and the hot water is drained directly to the river. The adjacent farmer is not ready to take the hot water due to the same conception. This may be another reason of large amount of water consumption.

(III) Each existing canal has its limited command and a local committee responsible for maintenance & water supply. When all the canals are integrated to one, the problems will also be integrated and may be beyond the capacity of the farmers.

(IV) The another practical problem of this project is land acquisition. All the command being irrigated by old canals, the people do not like to lose the land though they are getting the genuine compensation of land acquisition. For the project also, it has been a difficult situation to have different alignment from the old system.
So, the solution of the above mentioned problem needs an alternative thinking correlating with the local environment.

Whereas it is a question of integration of five canals to one, it is better to consider each local canal as a main canal irrigating particular hectares of land from different intakes. This has a benefit of less land acquisition, no disturbances in the water distribution as the quantity remains same, the maintenance. Work being done by the usual people. This will be a positive approach and will not increase the cost of construction.

Conclusions

The success of any particular project depends on the fact that how much the project is close to the benefit of the general people. This project with a whole aim of irrigating a beautiful agricultural field of the mountaineous district of Rapti Zone is directly connected with the livelihood of the people. In addition to the irrigation facility, if this area receives soil conservation, flood control, agricultural services, small hydro project, drinking water and agro-based industries simultaneously, then it will be a boom to the people there.
ANNEX 11

Production Credit for Rural Women/Household Production Systems
ANNEX I

Production Credit for Rural Women/Household Production Systems

A. Summary

The Project has recently broadened to include two small initiatives in the area of skills training and income generation. One is the Production Credit for Rural Women (PCRW) program, which began in FY 1985 by picking up initial Rapti Zone costs of an ongoing HM/G/UNICEF-funded nationwide program. The other is the Household Production Systems (HPS) pilot activity, whose first program year is FY 1986. Neither initiative was described in the PP, and both are too new as project components to have their accomplishments evaluated. However, observation of the PCRW suggests certain problems, similarities of purpose to other programs, and some changes in approach. Ideally, PCRW should be combined with the SFDP (see Annex 8), and in any event funded at a desired level in Rapti Zone by the nationwide donor rather than AID. HPS is too new to evaluate. If it proves itself during its first year, perhaps it might be folded into the Local Development Fund under the follow-on project.

B. PCRW: Methodology

The PCRW program, like the SFDP, is in an ongoing nationwide supervised credit program supported by a major donor, in this case UNICEF. The SFDP is run by the parastatal ADB, the PCRW is run by the Women Development Section of the Ministry for Panchayat and Local Development (MLPD), with funding from the majority-government owned commercial banks, under a socially-directed Priority Sector Credit Scheme. Like the SFDP, the PCRW has the purpose of increasing incomes of the rural target groups; of mobilizing credit for productive purposes; and of organizing beneficiaries into groups to conduct economic as well as community development activities. The Women Development Officer (WDO) takes the role of the ADB's Group Organizer, with the commercial bank providing the credit via ADB.

Since the Project bought into the national program first in Dang last year and in Salyan and Pyuthan last March, the worthy but modest program accomplishments can be seen in Table II-1. The PCRW program appears to have benefitted substantially from the involvement in the program of Peace Corps Volunteers in Rapti Zone. PCVs are active in PCRW elsewhere in the nationwide program, as are their Dutch counterparts in addition to UNICEF, the overall sponsor.

Two annexes to this paper are included to give a feeling for the nature and context of program operations. Annex II-1 is a formal progress report and work plan prepared by the WDO in Dang. Annex II-2 is a letter and report prepared expressly for the evaluation team by the PCV assigned to the PCRW program in Pyuthan.
NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION

Table 11-1: PCRW Program and Training Achievements

<table>
<thead>
<tr>
<th>Group Information</th>
<th>Dang</th>
<th>Salyan</th>
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<tr>
<td>Total No. of Women</td>
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<td>26</td>
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<tr>
<td>Total No. of Groups</td>
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<td>Group Savings (Rs.)</td>
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<td>NAa</td>
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<table>
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<tr>
<th>Loan Information</th>
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<tr>
<td>Items</td>
<td>Number of Loan Takers</td>
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<tr>
<td>Goats</td>
<td>5</td>
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<tr>
<td>Sheep</td>
<td>11</td>
</tr>
<tr>
<td>Pigs</td>
<td>4</td>
</tr>
<tr>
<td>Knitting Machine</td>
<td>--</td>
</tr>
<tr>
<td>Shops</td>
<td>1</td>
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<tr>
<td>Total Loan Amount (Rs.)</td>
<td>22,746</td>
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</table>

<table>
<thead>
<tr>
<th>Community Development and Training</th>
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<tr>
<td>First-Aid Center Establishment (No.)</td>
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</tr>
<tr>
<td>Pit Latrine Construction (No.)</td>
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<tr>
<td>Smokeless Stove Distribution (No.)</td>
<td>8</td>
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<tr>
<td>Tree Seedling Distribution (No.)</td>
<td>7</td>
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<tr>
<td>Vegetable Seed Distribution (Pkt. No.)</td>
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</tr>
<tr>
<td>First-Aid Treatment (No.)</td>
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<td>Literacy Class (No.)</td>
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<td>Total Duration of Class (Days)</td>
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<tr>
<td>Total No. of Participants</td>
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</tr>
<tr>
<td>Hosiery Training (No.)</td>
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<td>Total Duration of Training (Days)</td>
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<tr>
<td>Total No. of Participants</td>
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</tr>
<tr>
<td>Handicraft Training (No.)</td>
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</tr>
<tr>
<td>Total Duration of Training (Days)</td>
<td>--</td>
</tr>
<tr>
<td>Total No. of Participants</td>
<td>--</td>
</tr>
<tr>
<td>Sewing Training (No.)</td>
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<tr>
<td>Total Duration of Training (Days)</td>
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</tr>
<tr>
<td>Total No. of Participants</td>
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<tr>
<td>First-Aid Training (No.)</td>
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<tr>
<td>Seminars (No.)</td>
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<td>Total Duration of Seminars (Days)</td>
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<td>Total No. of Participants</td>
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<tr>
<td>Study Tour (No.)</td>
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<td>Total Duration of Study Tour (Days)</td>
<td>15</td>
</tr>
<tr>
<td>Total No. of Participants</td>
<td>5</td>
</tr>
</tbody>
</table>

aNA = Not Available.

C. **PCRW: Problems**

Three problem areas should be considered in reviewing even the potential role of this new component within the total Rapti Zone project. First, to the extent that buying into the nationwide PCRW project may be an effort to respond to AID's Women in Development policies, it does not make sense. On the one hand, PCRW in Rapti Zone is not intrinsically different from PCRW nationwide, and there is no particular virtue adduced in separating it out at the Zonal level. On the other hand, WID policy for a number of years has established a firm preference for integrating women in mainstream programs, rather than focussing on discrete women's projects or components. Indeed, there may well be more women reached under the women's and integrated groups of the SFDP than under PCRW.

Second, the commercial banks that support the PCRW are less committed to spreading the benefits of rural development than is the ADB. The Priority Sector Credit Scheme that obliges these banks' participation requires them to fund PCRW programs in only a couple of wards for each bank branch. With one or maybe two branches in a district, but nine wards in each of perhaps fifty panchayats in a district, this program has not and will not blanket the zone or country. Last year, for instance, USAID reports 55 women in Rapti Zone as members of the 12 groups then formed. However, USAID advises that nearly 1,000 women were reached under the program.

Third, there appears to be a structural flaw in the design of the PCRW program: overqualification of WDOs. Women Development Officers sent out by MPLD to organize PCRW programs in rural areas are given the rank of gazetted third-class officers, with an educational requirement of BSc. There is some feeling among program observers that the rank is so high as to impede the WDO's relationship with the village women, and that the educational requirement is not only intrinsically inflated for the task but unlikely to produce candidates who will tolerate the difficult and isolated conditions of rural life in Nepal. There appears to be some basis for these concerns--of nine WDOs trained in March, 1985, all but three had resigned or otherwise vanished within six months. The comparison with the SFDP Group Organizers, whose functions are similar, is illuminating. There is no fixed educational requirement for SFDP staff, and group organizer's rank equates to non-gazetted in the HMG service. At this more realistic level of grade and background, while there may well be unstaffed SFDP programs, we did not encounter them. Clearly a "supervised credit program" that is not supervised because WDOs cannot be kept on the job is not useful.

D. **Household Production Systems: Methodology**

The Household Production Systems (HPS) program is an even newer and less evaluable addition to the Rapti project than PCRW. The program was designed under a small contract during FY 1985 with a local firm (No-Frills Development Consultants), on a pilot basis. According to the Mission and contractor, it aims to provide opportunities to
rural households for raising their incomes through increased productivity. The effort would consist of training potential entrepreneurs and stimulating them to use inputs, services, appropriate technologies, and other resources in order to increase employment, services, supply, income, productivity, and established private enterprises.

Examples of activities carried out, as noted by the Mission and contractor, include:

- Motivation of nine farmers of Jinabang, Rolpa and six of Aahal Khola, Okharkot, Pyuthan to grow seed potato, for their own use and for sale to neighboring farmers. Jinabang farmers were provided training in seed potato growing techniques;

- Motivation of farmers in several communities to produce vegetable seed, drawing on the DOA program for vegetable seed production in Rukum;

- Establishment of more than half a dozen fruit nurseries and fruit orchards in Jinabang, Rolpa. Grafting and budding knives, training on pruning and plant protection for orchard development, and training for private fruit nursery establishment and management were provided;

- Distribution of a large number of metal bins at 50 percent subsidy rate in cropping system sites to facilitate seed storage at the farm level;

- Formation of a women's group at Bijuwar, Pyuthan to initiate a seed enterprise; and

- Demonstration of improved beehives (Newton's beehives).

During FY 1986, the decision was made to implement the HPS program activities through the PCO. Rs 2 million is reflected in the PCO budget for HPS activities this year. The draft implementation plan focuses on the PCO playing a coordinating role with line agencies, Local Development Officers, and Banks in the implementation of some 50 activities. PCO will take direct responsibility for training and providing selected inputs; will draw on the resources of the ADB/ATU for storage facilities; and will use the support of a technical assistance (TA) contractor (not as yet selected) for assistance in marketing promotion. The TA contractor will thus play an advisory role to the PCO in terms of implementation; and a central role in terms of surveys in the continual process of identifying new activities that are site-specific and adaptive.
In FY 1987, Mission plans call for HPS activities to be implemented by the LDO through the District Panchayat and/or directly through the concerned line agencies. This would largely depend on success this year and the speed with which decentralization will be implemented. PCO would not have a major role in HPS activities (other than monitoring) after FY 1986.

E. HPS: Problems

The HPS has no track record. It is aimed at worthwhile objectives, but seems to be founded on a basic misconception. The 1984 inception of this activity, and its very name, indicate that it is a Project response to a major recommendation of the 1983 Special Evaluation of the Rapti Project. In that document, five preconditions for further project activity were set out. The five areas in which action was considered essential were (a) the ecological situation, (b) institutional trends, including decentralization, (c) household production system, (d) incentive environment, and (e) family planning. Regarding household production systems, the report noted:

"This is central to rural development. An increase in household income is the key objective. Rural development strategy needs to be oriented and carefully coordinated, to strengthen the multiple income opportunities of the household in food crops, livestock, fodder, tree crops, off-farm wages and local industry employment."

The present evaluation team's interpretation of this recommendation is that it was meant to be a guide to the manner in which the entire project was to be carried out—e.g., the big-money items, especially the main stream project agriculture and livestock programs, which most contribute substantially to household income. To address the recommendation merely by adding another discrete and minor component called HPS to the project is not responsive to that earlier recommendation. The HPS program that was designed and is being instituted may well prove to be worthwhile addition to project delivery systems, but it hardly constitutes the fundamental redirection originally contemplated.

F. Conclusions

Like the SFDP, the PCRW program in Rapti Zone is nothing but the assumption of Rapti costs of an otherwise-funded existing nationwide effort which is presently targeting 24 of Nepal's 75 districts. If USAID/N wishes to support it in the Rapti Zone, there should be no need to do so under the Project, since the nationwide donor, UNICEF, is a major recipient of US assistance and the designation of target areas is presumably done with the participation of HMG, which also supports Rapti Zone development. While some other IRD project donors in Nepal do buy into PCRW locally, they are neither major international funding sources for the nationwide donor, nor are they explicitly focusing their area development so tightly. If a direct buy-in were necessary...
and desirable to maintain or expand Rapti activity levels, a direct relationship with the national project might simplify the management burden for the Rapti Project. However, as indicated in the ADB/SFDP report (Annex 8), the objectives of the PCRW could be much more effectively pursued if it were integrated with the Small Farmer Development Program of the ADB. This suggestion is made with full knowledge of the politico-organizational difficulties stemming from differing Bank sponsorships of the two programs, not to mention the direct involvement of the Women Development Section of the MPLD in one of the programs. However, the coincidence of purpose and operating styles; the need of SFDP to strengthen its outreach to women; the need of PCRW to resolve its outreach and staffing limitations; and the demonstrated willingness of HMG to take far bolder steps to achieve rational development ends are all too great to reject such an approach out of hand.

That PCRW is reportedly assigning some of its WDOs at the District level, supported by Women Development Assistants in the field, may be a step in the right direction. The Rapti Zone is reported to be under consideration for this effort. The success of preliminary efforts in Dang should be watched. It is difficult to imagine, however, how this could approach integration with SFDP as a means to increase scope and impact dramatically.

The HPS project component is too new to evaluate. Despite its apparent dissonance with its origins, the proposed approach may well be a useful addition to the service delivery vehicles the Project is trying to institutionalize.

G. Recommendations

- Ideally, the PCRW program should be combined with the SFDP (see Annex 8) in order to dramatically increase its scope and impact; and

- The HPS component, if it proves itself in its first year (by reaching predetermined levels of enterprise creation at a predetermined unit cost), should be continued under the Local Development Fund of the follow-on project.
The Production Credit for Rural Women Project brings together the extension network and community development expertise of the Ministry of Panchayat and Local Development with the credit resources and financial management expertise of the commercial banks to establish a group formation and input delivery mechanism in support of income generation projects for village women.

Under the recently initiated Priority Sector Credit Scheme, the Nepal Bank Ltd. and the Rastriya Banijya Bank are already undertaking the task of delivering small and large scale credit for agriculture, cottage industries and services. The Production Credit for Rural Women Project herein described the Ministry of Panchayat and Local Development will recruit and post Women Development Officers (WDOs). The WDO will work in a team together with the Branch Manager of the Bank, the Bank Field Assistant and a specially trained woman volunteer.

The Production Credit for Rural Women Project has an important role to play by working within a major HMG economic programme to find ways to bridge the gap between village women and the largely male-oriented development infrastructure. From this perspective the broader goals of the project involve the attempt to 1) increase rural women's access to services -- not only to credit but also to education, health care, agricultural extension, etc., and 2) through group formation, to increase their involvement in community level decision making and the local political process.
PROJECT OBJECTIVES

The specific objectives of the project are as follows:

1. To increase the incomes of low income rural families by drawing women into the market economy through commercialization of their current home production work and expansion into new types of income generating activity.

2. To encourage the development of small-scale production enterprises for women in agriculture, cottage industries and services which have been identified by HMG in the Sixth Plan as the "priority sector" by working with the commercial banks to increase the ability of these institutions to serve women clients in rural areas.

3. To establish self-reliant groups of village women who are organized to articulate their own priorities and know how to make the government machinery work for them and then to use these groups as an entry point for initiating a broad range of services benefiting women and their children.

4. To develop a delivery system using Women's Development Section personnel operating at the central, district and village level as "facilitators" to channel credit, training and production technology inputs into the women's groups in support of income generation projects.

5. To develop the capacity of the Ministry of Panchayat and Local Development's newly formed Women's Development Section to enable them

- to design and implement effective income generation projects for women and,
- to participate with other government bodies in the planning and implementation of community development projects (such as water supply, non-formal education, health, etc.) which meet the expressed needs of rural women and their families.

The Dang PCRW Project started from Chaiter, year 2040. This project is funded under the Integrated Rural Development Project. All sites outside the Rapti Zone are funded by UNICEF.

Our first year objective in the year 2041-42 of surveying 100 households was completed in the PCRW projects. Our team selected the area in Tangaon Village Panchayat, Ward #7, Raikhaliyan. There are different castes of people in this village: Tharu, Bhandan, Chhetri and Bahun.

The achievements under the Production Credit for Rural Women Program of Rapti IRDP for the first fiscal year:

1. Six months Functional Adult Education: Thirty-five women have been educated. From that class one girl is now studying in the 3rd class, Mahendra High School, Tulsipur.
2. Seminar of women development program.
3. Sanitary work and Family Planning seminar.
4. Family planning operation for 8 women of PCRW site and from the Panchayat, 23 women.
5. Livestock and Animal Health: Three day training for 20 women.
6. Livestock and Health: One week training for 9 women from different Panchayats and the PCRW site women. This training was held from Anchal Pasu Chikastaley. The women received 20 rupees per day.
7. The women learned about the banking process for Priority Credit Program.
8. The women learned how to work in an organized group and its importance.
9. One month's First Aid Treatment training for 1 woman at the Tulsipur Health Post.
10. Two day training about Maize Farming.
12. Organized 5 credit groups. The Bank provided credit flow for goats, pigs, sheep, making chipped rice and a kundra-pasal.
13. Household survey of 100 families.
15. Three day training for goat and pig husbandry.
16. Saving box distribution for 22 women from the credit groups.
17. Training about compost pits.
18. Three months training in sewing and knitting for 10 women.
19. Two week study tour for 5 women from the credit groups. (Tharu and other Caste women).
20. Open one First Aid Center in the PCRW Program site.

The cost of the above 20 programs was 35,000 rupees. This was used for tablets, pencils, sewing machines, thread, yarn, per-diem and rents for classrooms, etc.
Investment for productive activities from Bank was 22,784/-50 paisa. This was for 5 credit women's groups.

During a recent cholera outbreak, the WDO secured medicine from the Ghorahi hospital and distribution to 65 men, women and children. While distributing the jeeven jal, S.G., tablets and capsules, an explanation was given as to how to prepare the jeeven jal and the time to take the other medicines.

2042-43

Under the PCRW program for the coming year we have selected two Wards. One Ward in Tulsipur Panchayat: Ward #1 - Rana Gaun and Lahahure Chowr. There are several castes of people including a Magur Gaon Community. From Tulsipur Bazaar to Rana Gaun, the distance is 9 Km. There are 84 households in this area.

The other site of PCRI is Tarigaon Panchayat, Ward #4 Paddha. There are 104 households including 84 Tharu homes.

A) COMMUNITY DEVELOPMENT PROGRAM 2042-43

1. Drinking water
2. Plantation
3. Functional Literacy Adult class
4. Toilet construction
5. Seeds distribution
6. Primary School construction by the PCRW site people
7. Household survey
8. Select new area of development for a PCRW site.

B) SKILLS DEVELOPMENT TRAINING

1. Livestock and Health training for 7 women
2. First-Aid training for 5 women
3. Sewing training for 20 women
4. Weaving training for 12 women
5. Study tour for 10 women
6. Child care and Family planning orientation of one week for 100 women.

C) PRODUCTIVE ACTIVITIES PROGRAM

New Women's Group formation - 12

Investment from Bank in Cottage Industries, Service and Agriculture.

Budget for this year - one lakh eighty two thousand (182,000) rupees.
We have distributed 100 packets of different kinds of seeds in the past two months. There were also 200 fodder plants given to the PCRW groups members. 54 household surveys were completed with the forming of 10 new credit groups. One group has a 10,000 rupees investment for goats. This is a mixed group of men and women.

At present our area is only 3 Wards in 2 Panchayats. In 2042-43 we plan to extend our PCRW Project area to 2 or 3 new Wards. Our future goal is to cover the entire Dang District.
Letter from Veena Siddharth, PCV, to the Evaluation Team Regarding the PCRW Program in Pyuthan

To the AID Evaluation Team:

I am sorry that I cannot be in Bhingri when you arrive and I hope the written materials I am leaving prove useful.

The PCRW program rests on the relationship between the Women Development Officer (WDO) and her counterpart, the Peace Corps Volunteer (PCV). My WDO Nirmala Shrestha, came to Bhingri in Mid-March. When I arrived on July 20, she had left for Kathmandu. She has since resigned so I am in the unique position of never having worked with my counterpart. Nirmala held a Literacy Class, Knitting Training, Agricultural Training, Veterinary Training and Smokeless woodstove training. Most of these trainings were not completed and there seems to be some discrepancy on the payments for the trainings (per diems, salaries, office expenses etc.). The Local Development Officer in Khalanga says that all the money was transferred to Nirmala while the village says that she said there was not enough money to complete the trainings. Since I was not here I can only speculate on what happened. A review of the office budget must be done by the Women's Development Section in Kathmandu.

There is tremendous potential for the PCRW program in Bhingri. The large number of female headed households, the supportiveness of the Bank Manager and JTA and the cooperation of the Small Farmers Development Program and other offices make Bhingri an ideal site for PCRW. However, without support from Kathmandu in the form of field visits, finding a new WDO and two women workers and guidance on new projects, it will be very difficult to get started.

As an American, I cannot work in the office without a Nepali counterpart. I cannot handle the budget and I do not fully understand the local political structure. Also, there must be a Nepali in the office to carry on the work after I leave or else the long term effectiveness of the program will be lost. I have asked WDS to find a new WDO and to review the office budget and until these things are done I will not return to the office.

Since my arrival in Bhingri, I surveyed 50 Households in Ward 1 and explained the program to the women. Nirmala had not worked beyond the bazaar so most women were unaware of the income generating possibilities in PCRW. Four credit groups have been formed and all have successfully taken loans making the total number of women's credit groups 13. All the loans were for livestock and in the future I'd like to move away from livestock and towards other income generating activities for women.
Other activities I would like to begin:

- another longer literacy class that is not only for young girls and uses David Walker's materials
- a sewing training
- improvement of health facilities
- nursery planting in the school
- drinking water taps in Belbas Panchayat

I cannot stress enough how much PCRW is needed in this area. Women have been coming to the office every day since I arrived and I firmly believe that Bhingri could be one of the most successful of the 22 PCRW sites if sufficient support were given from Kathmandu. With an interested WDO and two women workers, we could extend PCRW to all five wards that the Bank administers.

I hope to meet you in Kathmandu after your trip to Bhingri.

Sincerely,

Veena Siddharth
Community Profile: Bhingri

BHINGRI is situated in the west of Pyuthan district, near the border with Rolpa. It is a two day walk from Ghorahi and in the dry season it is accessible by tractor or jeep on the motor road. The Mardi Kola runs through Bhingri making it a picturesque river valley but because of the low level of the river, there is no irrigation.

The Intensive Banking in Bhingri in Wards 1 through 5. These wards are also the PCRW program's working area but at the moment PCRW is starting in Ward 1. In time, it can be extended to Belbas Panchayat across the river. In Wards 1 through 5, there are approximately 500 households.

Caste and Settlement patterns

In Bhingri Chettris are the predominant group followed by Newars, Damais, Kamis, Sunwars, Sarkis and Magars. Magars are concentrated in the hills nearby such as Bhingri Kote in Ward 1. Lower castes form a high proportion of the population of Ward 2 which is also one of the poorer wards. All the groups use Nepali as their main language.

Literacy

The Male literacy rate is approximately 20-25% while the female rate is only 2-3%. Girls are severely, under represented in the school and education for girls is not encouraged. Female participation in government or non-government organizations is minimal.

There are no women elected to the Village, District or National Panchayat. The Nepal Women's Organization is not active in this area.

Economy

Main Occupations

The primary economic activity of villagers is agriculture. There are a few small shops in the bazaar owned by Newars but when the motor road is closed, there is little activity there. By far, the largest source of income in Bhingri is through migration. The Bank JTA estimates that 90% of the men of Bhingri are working in India, mainly Madras. As a result of migration, a large proportion of households are female headed with women making independent decisions on household priorities and allocations. This fact makes Bhingri an ideal site for PCRW. The women are receptive to the programs and the local line agencies recognize that need to include women in their programs.
Agriculture

Subsistence farming is the rule with corn the main crop followed by wheat and rice. Often families must buy rice while there is usually enough corn and wheat to avoid having to spend money.

Buffaloes and goats are the most common livestock followed by chickens. Some of the lower castes keep improved pigs.

As for fruits and vegetables, potatoes, onions, garlic and radishes are readily available while green vegetables are more difficult to obtain. There are some banana, mango and tangerine trees but production is sporadic. The Agricultural sub-center distributes improved vegetable seeds but without training and a steady source of water it is difficult for villagers to successfully grow vegetables.

Local Line Agencies

In Bhingri Panchayat alone there is a post office, a veterinary office, an Ayurvedic Clinic, a Small Farmer Development Programme Office, two Forestry Range Offices and a Road Department Office. In Belbas Panchayat across the river there is an Agriculture Sub-center and a Health Post.

Chiefly concerning PCRW:

1. Veterinary office - there is little if any medicine available and field visits are rarely made. It does not seem as if villagers make much use of this office.

2. Small Farmer Development Programme (SFDP). The SFDP programme has been successful in reaching both men and women farmers. Although only 4 women's groups were formed, most women are familiar with the programme and therefore already have a basis for understanding PCRW. SFDP has been operating in Wards 1 through 9 and the Manager seems very enthusiastic about PCRW.

Agriculture Sub-Center: The Agricultural Sub-Center is only staffed by one JTA so it is difficult to fully concentrate a program on women. Vegetable seeds have been distributed to women's groups.

Health Post: Most villagers do not regularly visit the health post and there seems to be a chronic shortage of medicine there. There is a private doctor in the bazaar but his fees are high and the majority of villagers cannot afford to go to him. The services that the health post provides must be improved. However, family planning is provided.

Naturally, the most important institution that PCRW deals with is the bank. Both the Bank Manager and the JTA of the local Nepal Bank Limited have undergone PCRW training and are extremely enthusiastic about the site, they had already formed 9 women's credit groups.
ANNEX 12

Roads
ANNEX 12

Roads

A. Summary

An expenditure of US$ 4.29 million, for upgrading of 200 km of rural hill roads (Project roads), utilized all the allocated funds but achieved only 26 percent of the objective. The funds allocated were much below those required for fair weather truckable roads. The new objective defined by the 1983 Special Evaluation—completing the Project roads to standards of jeep and tractor haulage—was at least 75 percent achieved with respect to earthwork and rock cutting for those roads. The Project roads with their improvement works have provided tractorable-jeepable access to Salyan, Pyuthan and most of the way to Rolpa, enhancing government delivery of basic services, greatly facilitating cheaper and more timely food imports, and access for government employees. The improved transport of construction materials, agriculture inputs and related supplies has made implementation of the Rapti Project simpler and easier. The supplementary works on project roads have also laid the groundwork for future improvements. The IDA-funded Lamahi-Ghorahi-Tulsipur road and the East-West Highway have been completed and their impact on Dang District and Rapti Zone is considerable. Continued support for the maintenance and seasonal opening of the Project roads is indispensible for any follow-up activities.

B. Purpose

The objective of the roads program was to upgrade 200 km of three hill roads to accommodate light trucks. This upgrading, as outlined in the feasibility study of Rapti Zone IRDP, was to (1) promote an increase in interchange among the various regions, especially between the hills and the Terai, (2) provide a better infrastructure as a base for development in the area, and (3) generate employment.

The PP included this activity under the program component for rural works.

The people of four districts in the zone have contributed millions of days of labor over the last 25 years for the construction of three currently jeepable roads: Tulsipur-Salyan (61 km), Ghorahi-Pyuthan (81 km), and Chakchake-Libang (58 km). . .

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1PP, p. 12.
The outputs specified in the PP included approximately 1,500,000 days of wage labor over a three-year period in the upgrading and environmental stabilization of 200 km of road.²

C. Background

The Rapti Zone IRDP feasibility study proposed to improve three roads Tulsipur-Salyan (61 km), Ghorahi-Pyuthan (81 km) and Chakhake-Liwang (58 km). The upgrading was to enable the roads to accommodate five to seven-ton, single-axle trucks for at least eight months of the year. It specified that the local roads component would be executed by HMG/DOR. The DOR was to provide two engineers and six overseers for the supervision of this component.

The PP specified a total cost to AID of US$ 2.5 million and to HMG of US$ 1 million during the project period. The ProAg provided a total of US$ 3.529 million (US$ 2.5 million from AID and US$ 1.029 million from HMG) to improve the roads.

The 1983 Special Evaluation (MTE) recommended that the East-West Highway and the district access roads to Salyan, Pyuthan and Rolpa be completed expeditiously. It also recommended that, for the district access roads, issues of standards and contractor performance be resolved promptly and erosion control work and maintenance plans be accelerated. The MTE further specified that the three roads under the Rapti Project should be completed to standards for jeep and tractor haulage.³

USAID/N contracted with Louis Berger International (LBI) in December, 1984 to perform socioeconomic and engineering studies of these Hill roads which are expected to be completed by November, 1985. These studies are to provide a basis for cooperation with the Asian Development Bank in further developing the three District roads.

D. Description of Activities and Program Carried Out

1. Organization and Management

The Project roads effort was managed by the HMG Department of Roads (DOR). A divisional engineer (class II gazetted officer) acted as Project Officer. As of 1985, the project had 26 approved positions. Seven of these were filled in September, somewhat fewer than earlier in the year. The total approved staff contained one divisional engineer (temporary class II gazetted), four assistant engineers (temporary class III gazetted), 14 overseers (temporary, non-gazetted) and one senior accountant (class II gazetted). Recently, the World Bank IDA-funded, Tulsipur-Ghorahi-Lamahi feeder road project

²Ibid.

³MTE, p. 35.
was reorganized and put under the Project's DOR. This added physical resources (equipment, offices and manpower) and made the DOR a much stronger organization.

2. Inputs

Prior to the Rapti Project involvement, two million person days of voluntary labor funds had been spent on these three District roads. In terms of net permanent contribution, about one million effective person-days, valued at Rs 8.1 million (based on 1982 labor wage rates), were provided.

Prior to the Rapti RAD Project (between 1977 and 1981) HMG had invested Rs 11.2 million cash directly and provided significant equipment, vehicles and equipment services indirectly.

During the Project period, the contribution to the roads project has included peoples' participation (in providing right-of-way land and HMG and USAID contributions.

The former amounts to about 98 hectares valued at Rs 4 million (approximately) in 1985 prices.

Table 12-1 shows budgeted and expended funds for the roads component for Fiscal years 1980/81 through 1984/85. Other contributions from USAID include the following:

- Detailed studies of the Rapti District roads by LBI (approximately US$ 562,000);
- Three Jeeps;
- Three Honda motorcycles;
- Reconnaissance engineering geological studies in 1981 and 1982;
- A one month observation tour in the US, including participation in the Third International Conference on Low Volume Roads in Arizona, for two DOR engineers in 1983;
- A six-week observation tour in Southeast Asia for one DOR engineer;
- Four years of training in engineering in India and Nepal for six overseers from the DOR; and
- Two years MS degree training for two DOR engineers.
Table 12-1: Inputs Provided by HMG and USAID for the Roads Component, FY 1980/81 Through 1984/85

<table>
<thead>
<tr>
<th>Fiscal Years</th>
<th>Budget Released</th>
<th>Total Expenditures (Rs.000)</th>
<th>USAID Expenditures</th>
<th>HMG Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US HMG</td>
<td>Expenditures</td>
<td>Expenditures</td>
<td>Expenditures</td>
</tr>
<tr>
<td>1980/81(2037/38)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1981/82(2038/39)</td>
<td>6,377,470</td>
<td>4,912.313</td>
<td>4,204.841</td>
<td>705,673</td>
</tr>
<tr>
<td>1982/83(2039/40)</td>
<td>10,642.330</td>
<td>10,283.233</td>
<td>9,284.829</td>
<td>998,404</td>
</tr>
<tr>
<td>1983/84(2040/41)</td>
<td>18,189.550</td>
<td>17,387.097</td>
<td>11,340.113</td>
<td>6,026,998</td>
</tr>
<tr>
<td>1984/85(2041/42)</td>
<td>19,300.000</td>
<td>18,940.661</td>
<td>13,468,046</td>
<td>3,446,410</td>
</tr>
<tr>
<td>Total</td>
<td>54,509.350</td>
<td>51,523.305</td>
<td>38,301.120</td>
<td>13,214,232</td>
</tr>
</tbody>
</table>

Source: USAID Rural Development Office
3. Outputs

The road program focused mainly on road-widening, grade corrections, and structural and revegetation works, for which labor-intensive construction techniques were adopted. The annual progress in these areas since the beginning of project funding in FY 1982 was about 30 percent, 65 percent, 95 percent and 96 percent, respectively. The progress achieved against the objective of a fair-weather, single-lane, truckable road was estimated at 26 percent, at a total cost of Rs 51 million.4

Since the 1983 Special Evaluation, considerable progress was made in road construction. The East-West Highway passing through Deokhuri Valley of Southern Dang District has been completed except for one bridge over the Rapti River. The IDA-funded Lamahi-Ghorahi-Tulsipur road has been completed; Dang District is now easily accessible all year around. The three Project roads have been brought up to jeep and tractor standards, without structures and drainage. The District headquarters of Salyan, Pyuthan, and three-quarters of the way to Liwang (District headquarter of Rolpa) are now accessible to tractors and jeeps for the dry season (at least six to seven months each year (see Table 12-2). Groundwork has been laid for progress in biological stabilization of road corridors. The road component utilized all allocated funds within the grant agreement period, but the amount of these funds was only about 20 percent of the level required.

E. Constraints, Problems and Lessons Learned

1. Constraints

The topography of the Hill regions of Nepal presents unique and difficult conditions for constructing viable low-cost roads. The lowest possible cost per kilometer is 1.5 million to $ 2.5 million rupees if built to Asian Development Bank (ADB) all-weather minimum standards, which is a large amount for low-cost/low-volume roads. The criteria and parameters for low-cost/low-volume roads for mountainous rural settings such as Nepal’s have not been developed fully. This has seriously effected cost estimation, often making it unrealistically low. The standards of work demanded by most funding agencies (e.g., ADB) appear too high and not compatible with the requirement of low-cost roads for rural Nepal.

2. Problems

The grant agreement of 1980 provided US$ 2.5 million AID funding and US$ 1.0 million HMG funding to improve the roads, about US$ 17,000 per kilometer. This is far below the average cost of similar

Table 12-2: Status of Three District Roads in Rapti Zone, (1985)

<table>
<thead>
<tr>
<th>Road Status</th>
<th>Salyan Road</th>
<th>Pyuthan Road</th>
<th>Rolpa Road</th>
<th>Total Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeepable</td>
<td>60 km</td>
<td>64 km</td>
<td>34 km</td>
<td>158 km</td>
</tr>
<tr>
<td>Tractorable</td>
<td>54 km</td>
<td>64 km</td>
<td>34 km</td>
<td>152 km</td>
</tr>
<tr>
<td>Truckable gravel surfacing</td>
<td>2 km</td>
<td>2.5 km</td>
<td>-0-</td>
<td>4.5 km</td>
</tr>
<tr>
<td>Truckable with partial structures</td>
<td>10 km</td>
<td>5.5 km</td>
<td>15 km</td>
<td>30.5 km</td>
</tr>
<tr>
<td>Truckable earthwork only</td>
<td>10 km</td>
<td>7 km</td>
<td>7 km</td>
<td>24 km</td>
</tr>
<tr>
<td>Total truckable</td>
<td>22 km</td>
<td>15 km</td>
<td>22 km</td>
<td>59 km</td>
</tr>
</tbody>
</table>

1Providing normal maintenance and slide removal is continued.
hill roads in Nepal. LBI's preliminary cost estimate (1985) for building the Tulsipur-Salyan road to ADB standards, is US$ 140,000 per kilometer.

Local contractors from the Zone lacked work experience. This resulted in mismanagement, low contract bidding, defaults in labor payment and delays in contract execution. Even the fixing of daily wage rates, which had to be decided by the Zonal Commissioner's office, were not timely and practical. Road task specifications were not simple and appropriate to local conditions, including the contractors' capability and supervisory strength and the availability of materials. The geological and geotechnical experience of the engineers in dealing with hill conditions was especially weak.

3. Lessons Learned

Road construction should be started only after thorough and well-coordinated studies covering socioeconomic, geological engineering, geotechnical and civil engineering aspects. Traditional road engineering is inadequate and misleading for hill roads. The importance of geological engineering inputs and skills in maintaining hill road stability should be recognized.

Nursery and revegetation programs should form a part of hill road engineering and reinforce the overall concern for environmental restoration.

F. Measurement of Progress

The total progress achieved in building a fair-weather road (eight months of the year) to accommodate five to seven-ton single-axle trucks has only been 26 percent, although all the allocated funds provided were used. The 1983 Special Evaluation objective of completing the three roads under the Rapti Project to a standard for jeep and tractor haulage, was 76 percent achieved for earthwork only (without drains, structure and retaining walls).

Approximately 1.5 million person-days of wage labor were to be created by all the rural works, including the rural roads component. The road project in FY 1984/85 alone was able to employ 463,258 man-days at an expenditure of Rs 18,940,661. If a direct relationship between expenditures and person-days of labor is assumed, the road project provided employment of 1.26 million person-days and more than fulfilled its target.

Progress on biological stabilization of the roads is described in Annex 13.
The Project's roads which, before the project, were tractorable to Pyuthan only had provided tractorable and jeepable access to Salyan and Pyuthan and most of the way to Rolpa by 1985/86. They facilitated government delivery of basic services, cheaper and more timely food imports to food-deficit hill areas, people's mobility, and transportation of construction materials and agricultural inputs. A traffic count of the Tulsipur-Salyan Road revealed the following:

Tractor and jeep traffic was open from the month of October/November to June/July of FY 1984/85, with intermittent road closures due to construction work in progress. The road was used by vehicles on 76 days of the eight-month period. The total number of one-way tractor trips to Salyan was 676, and the total number of one-way jeep trips was 128. The quantities of materials transported to Salyan were approximately 1,200 MT of food grains, 95 MT of salt, 250 MT of construction materials, 200 MT of fertilizer and seeds, and 100 tractor trips of passenger and other goods. Approximately 1,900 MT of food grains were also transported to Salyan, Rukum, and Rolpa by porters and animals during that fiscal year.

Traffic records for Rolpa road were not maintained by the Project because the road was not open over the full period. While no physical count has been maintained by the DOR, traffic on the Pyuthan Road is considered to be much more than on Salyan road, because the Pyuthan Road has been tractorable for eight to nine months of the year for the past four years. Data from the Food Corporation Office and the AIC Office at Ghorahi indicates that 5,600 MT of food grain from Food Corporation supplies alone and 74 MT of agriculture input materials from AIC alone were transported to Pyuthan by tractors during FY 1984/85. The Ghorahi-Pyuthan road was open to tractors and jeeps from October, 1984 to July 11, 1985.

The road project provided nearly one and one-quarter million person-days of employment, significantly assisting income generation.

The road project, although incomplete, helped achieve better interaction and social mobility of the people within the zone. Government employees, for example, prefer to be posted in Dang, Salyan and Pyuthan rather than Musikot and Liwang because the latter are not connected by roads.

The institutional base of the road component was strengthened and the project office is in a much stronger position to organize and manage the works entrusted to it.

LBI indicated the cost of upgrading the Tulsipur-Salyan road (62 km) to all-weather ADB standards to be about Rs 150 million. This makes it the costliest of the three roads. It remains economically feasible, however, showing a positive IRR of 17 percent. Other roads are expected to show better economic returns. The LBI study retains
the original alignment except for a few stretches totalling perhaps 30 to 40 kms. Improvements already made will therefore not be lost to future programs.

The road project hired 59 contractors to execute 66 contracts. Quite a number of these were from the Rapti Zone; even those not from the Zone hired local subcontractors and labor. Thus, the project also helped develop local, private sector capability.

H. Conclusions

- Although funding was very inadequate, available money was effectively utilized to upgrade the rural roads;

- The roads open every dry season for 6 to 8 months, substantially improving delivery of basic services and promoting better socio-economic development in the Rapti Zone;

- The East-West Highway and the IDA-funded Lamahi-Ghorahi-Tulsipur road have made Dang district accessible. These roads have already started to make substantial positive impact on the hill districts of the Rapti Zone;

- Rapti Project efforts in other sectors, components and sub-components were assisted significantly by the Project's rural roads;

- Only a start has been made on the biological stabilization measures. This work needs to be continued and initiated on the Tulsipur-Salyan road (see Annex 13);

- Voluntary labor utilization for hill road construction without proper road design beforehand wastes resources in the longer run; and

- Inclusion in the Project of a road component not based upon detailed studies was a mistake.

I. Recommendation

The follow-on Project should make modest provision for maintenance of the three Project roads, including necessary biological stabilization and drainage works to prevent erosion and ecological damage of these incomplete roads, pending approval an anticipated Asian Development Bank Project to upgrade them to all-weather roads.
ANNEX 13

Road Stabilization
ANNEX 13

Road Stabilization

A. Summary

A revegetation program along the 200 kms of the Project rural roads was initiated in 1983. Fifteen critically impacted areas were stabilized in 1984 and 1985. This stabilization is essential to prevent soil erosion and major damage to the roads and to reduce recurrent maintenance costs. It should be continued as a priority activity.

B. Purpose

The purpose was to stabilize the impact of the Project rural roads on the environment. This activity relates directly to Project programs in forestry and soil conservation (see Annexes 6 and 7).

C. Background

The people of Salyan, Dang, Pyuthan and Rolpa contributed millions of days of labor since 1960 for the construction of the three Project roads: Tulisipur-Salyan, 61 kms; Ghorahi-Pyuthan, 81 km; and Chackchake-Libang, 58 km. These roads service hill areas of the four Districts named above, and improve access to Rukum, the most remote District from Dang and the southern market centers.

The roads are cut along steep slopes of the Middle Hills. This cutting—combined with the heavy monsoon rains, the loss of ground cover to intensive livestock grazing, and village wood cutting and gathering—provokes accelerated erosion along the length of the roads. Landsliding, soil erosion, river siltation and damage to agricultural and forestry land is visible along the alignments. The intense uncontrolled run-off during the rainy season (June to September) damages the road by land slides, undercutting and gully formulation. As a result, major maintenances is required in September and October to open the roads to traffic.

The Project Paper proposed upgrading the roads to accommodate five to seven-ton single-axle trucks for at least eight months per year—a target which was revised in 1983 to that of a tractorable (including four-wheel drive passenger vehicles) standard—and to use both structural and biological measures of environmentally stabilizing the roads, thus decreasing maintenance costs and road closure time. This road stabilization activity was to draw upon the experience of the HMG/USAID Land Slide and Soil Stabilization Project (367-0138) carried out for the Far Western Hills Roads.
Under the Project Agreement executed in August, 1980, funding for road improvement and stabilization was estimated at approximately US$ 2.5 million, a gross underestimate (see Annex 12).

The 1983 Special Evaluation recommended completion of the road construction work as expeditiously as possible and acceleration of erosion control and maintenance work. It pointed out that erosion control is a priority and that maintenance arrangements must be agreed upon without delays as "the works are highly vulnerable to land slides and washouts...[and]...the work is not proceeding fast enough."1

Revegetation and biological control measures were initiated in 1983/84 (2040/41) with construction of the Khumaltar Nursery. Revegetation plantation was started in 1984 on the Ghorahi-Pyuthan and Chackchake-Rolpa road corridors based on planting local species and facilitating natural regeneration. Objectives of the biological stabilization were defined as follows:

- Protect and stabilize the immediate road corridors;
- Reduce grazing by domestic livestock along the road corridors;
- Assist local communities in developing a land-use plan for the forest, pasture and degraded lands along the road alignment; and
- Coordinate with the Department of Forest (DOF) and Department of Soil Conservation and Watershed Management (DSCWM) in promoting soil conservation along the road corridors.2

Structural works to control erosion, such as gully control and drainage works, were included as part of the road improvement construction program.

D. Description of Activities and Programs Carried out

1. Organization and Management

This activity was managed by the Rapti Zone Office of HMG’s Department of Roads in Ghorahi. A description of the Ghorahi Office is found in Annex 12. The rationale for management by the DOR rather than, for example, the DOF or the DSCWM is based on the need for both biological and structural (mainly drainage works) control measures, which need to be integrated with road maintenance and repair planning.

1. MTE, p. 35.

2. **Inputs**

Funding for this activity was included in the road improvement construction program. Inputs for structural stabilization are included in those for construction. Expenditures for biological stabilization through September 1985 is reported by the USAID Controller as Rs 750,000, less than two percent of the total road construction expenditures.

3. **Outputs**

a. **DOR Khumaltar Nursery**

The DOR Nursery, located in Tiram Panchayat in Pyuthan district, was established in 1983/84 (2040/41) and is the largest nursery in the Zone. Seedling production capacity is 200,000 plants per year. The DOF considers it the best-managed nursery in the Zone, thanks to a highly skilled and motivated nursery foreman.

b. **Critically-impacted sites stabilized by plantations**

Eight separate plantations at critically impacted sites were completed in CY 1984 and seven in 1985. The work was carried out on the Ghorahi/Tribhuvannagar-Pyuthan and Chackchake-Rolpa road corridors. A total of 95 hectares has been planted with indigenous species. A few varieties of grasses have been planted for quick ground cover to stabilize roads cuts. Tree seedling survival on the roadside plantations has exceeded 80 percent, a rate considerably higher than the Zonal average for community forest plantations (see Annex 6).

c. **Seedling distribution**

Seedlings have been distributed free to villagers in the vicinity of the Khumaltar Nursery. Over 10,000 seedlings (estimated) were distributed in 1984/85.

d. **Structural works**

As noted above (see Section B), structural works for gully and soil erosion control were carried out under the road improvement construction program (see Annex 12).

E. **Problems and Constraints**

1. **Progress and staffing**

The entire staff of the DOR in Rapti Zone are engineers and overseers. There is no forester working within the DOR's Zonal Office to help formulate, manage and monitor the biological stabilization work.
2. **Nursery capacity**

There is no DOR nursery on the Tulsipur-Salyan road corridors, where plantation work on impacted areas of that corridor is needed.

F. **Findings**

1. **Plantations**

Fifteen seriously impacted areas on the Ghorahi-Pyuthan and Chackchake-Rolpa roads were protected by plantation in 1984 and 1985. Seedling survival rate is comparatively high.

2. **Nursery establishment and seedling production**

A well-managed nursery has been established for the Pyuthan and Rolpa roads. The production capacity is sufficient for plantations totalling 30 ha/year and protecting ten to twenty impacted sites.

3. **Structures**

The DOR has provided almost one hundred gully control and soil erosion structures at critically impacted points.

4. **Local response**

Most of the plantations along the road are highly visible and villagers in their vicinity have responded positively to the program.

G. **Conclusions**

- Biological and structural (mainly drainage) control works are necessary to stabilize the 200 kms of Project District Panchayet roads. A proper appraisal of the amount of work remaining has not been done. The Team estimates that approximately one-third of the work had been completed;

- The construction program has included a great deal of structural work required for road stabilization work. Continued structural work will be required at critically impacted points;

- Biological stabilization began with the construction of the Khumaltar Nursery in 1983/84 and plantations in 1984. Lacking a nursery, biological stabilization was not possible on the Salyan road. Continued biological stabilization work will be required at critically impacted points; and

- A proper plan and program for work to be carried out is not available.
H. Recommendations

- Continued support for this activity should be provided as a matter of priority. Pending initiation of construction work to upgrade the roads to all-weather standard, funding should be provided to enable the DOR to install structural works at critically impacted points as part of the road maintenance program;

- A detailed stabilization program should be formulated for the period of the Seventh Five-Year Plan. The Department of Roads, with the help of USAID, the DOF and the DSCWM, should prepare detailed work plans for 1985/86 and 1986/87;

- Two additional nurseries should be established in 1985/86 and in 1986/87 to permit expansion of the revegetation program;

- A qualified forester (Class II gazetted) should be hired to work with the Department of Roads in Ghorahi on the program. Close coordination should be developed by DOR with Zonal and District staff of the DOF and DSCWM; and

- Local people should participate actively in developing appropriate land-use plans for forestry, pasture lands and degraded lands in the roads corridors, in close cooperation with Ministry of Forest. Extension should be part of the biological control program.
ANNEX 14

Small Rural Works
ANNEX 14

Small Rural Works

A. Summary

Seventy-two small rural works projects were approved for implementation under this program through September 1985. Of these, 53 were completed, including 24 drinking water systems, 10 minor irrigation projects, 12 bridges and seven trails. The program has been slow in implementation. However, it has served importantly to help build institutional capacity in the five districts of the Zone to provide effective technical support to village panchayat for local development projects. Even more significantly, it has contributed importantly to the objective of fostering and developing local participation in and management of such projects. It has demonstrated the willingness of villagers to work together and to mobilize their own resources for their village development and has increased local capacity to plan and manage local development. It is recommended that the program be continued as part of a local development fund planned and managed by the Districts, and that PCO withdraw from design approval by no later than 1986.

B. Purpose

The Project provides resources to support locally planned projects and locally constructed rural works in each of the five districts of the Rapti Zone.

The Small Rural Works program was designed to provide Village Panchayats and other local organizations with resources for development undertakings which to improve the quality of life of these very poor, isolated communities and increase their labor productivity. Under the Project Agreement signed in August 1980, USAID agreed to provide funding of approximately US$ 3 million over a five-year period for:

- Local drinking water systems to improve quality of life in these rural areas, increase women's productivity and contribute to improved health for the community and particularly the children;

- Minor irrigation projects to increase agricultural productivity;

- Trails and bridges to improve communications and accessibility to markets; and

- Other small rural works projects such as village buildings.
The Project Paper and Project Agreement expressly provided that all activities would be initially identified by Village Panchayats or other local organizations and approved at the district level. Necessary technical assistance was to be provided by District Technical Offices. Local training and the provision of necessary employment and supervision was to be included in the funding. The local participation of the people (user’s groups) was to be the central element of these projects.

The Project Agreement specified that:

- About 40 gravity-flow drinking water systems would be constructed by villagers, with an AID contribution of approximately US$ 1 million;
- Minor irrigation projects would bring 3,100 ha of land under new or improved irrigation with maximum participation of water users’ associations in planning and design, and with an AID contribution of $1 million supplementing local labor contributed by users;
- Approximately US$ 1 million of AID funding was to support other rural works at the district level including wooden, cantilever, suspension and suspended bridges, trail upgrading and small building construction, with local contributions of 20 to 25 percent of their cost by villagers.

The Project Paper recognized that district capabilities to provide technical and materials assistance to these local development activities would need to be strengthened. Accordingly, the Project Agreement provided funding (under the institutional component of the project) to physically upgrade, equip, and increase the staffing and logistic support ability of the Local Development Offices1 and the District Technical Offices. Funds were also earmarked for training and study tours for village leaders in various development skills, including public health, sanitation and family planning.

In practice, however, during the first years of the Project, USAID and the HMG Project Coordinators Office (PCO) kept a heavy hand on the approval process. Not enough was done to strengthen the District Technical Offices capacity to provide technical assistance to participating local communities. As a result, the 1983 Special Evaluation team recommended that the Project upgrade and provide intensive training to DTOs and turn over responsibility for these projects to the Districts.

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1Strictly speaking the office of the LDO is termed the District Panchayat Office.
As a result, and based on a seminar held in Tulsipur in May 1984, new Guidelines for Rural Works Implementation were issued by USAID and HMC in June 1984. These guidelines provided for the full transfer of responsibility for selection, design, approval and implementation of projects to the districts. Under this arrangement the PCO is to retain responsibility for coordination, training, monitoring and requests for financial disbursement—the functions held by the center and in effect delegated to the PCO. However, the new guidances specified that until technical staff were sufficiently strengthened—in accordance with specific plans—the PCO would retain responsibility for:

- Reviewing/approving projects;
- Providing procurement, training and logistic support to the districts;
- Monitoring activities; and
- Submitting reimbursement requests to USAID for expenditures related to these efforts.

The PCO continues to retain these responsibilities.

D. Description of Program Carried Out

1. Organization and Management

Under the Project design, activities were to be identified and approved by village and district panchayats. Technical assistance for planning and design—completed design work was a requirement for funding under the ProAg—was to be provided through overseers and sub-overseers.2

Since, at the district level, local development projects were the responsibility of the DTO, in principle a civil engineer. The Project paper also provided for a Technical Support and Monitoring Unit (TSU) to be associated with, but not fully funded through, the PCO. Its responsibility was to provide technical support and monitoring for the buildings and rural works elements of the Project. (This unit was also to include a section for final design and construction supervision of medium irrigation projects staffed by the Department of Irrigation.)

During the first four years of the Project the small rural works program was managed differently than the conception presented in the Project Paper (and in effect in the ProAg). The process actually followed involved:

2An overseer is an engineering technician with two to three years formal training beyond high school at the Institute of Engineering in Kathmandu. A sub-overseer is trained at the Panchayat Training Institute at Nepalganj.
Projects were identified by village sand approved for incorporation in the annual program by Districts—the annual program and funding levels having been established by the MPLD and USAID;

Feasibility studies and design works were usually handled by the TSU or by Nepalese consulting firms hired by PCO/TSU, particularly in the first three years of the Project;

Design and feasibility studies were subject to a lengthy process of review and approval both by PCO/TSU and by USAID; and

Virtually all procurement of material was managed by the PCO's Logistic Support Unit.

It was only after the strong recommendation of the 1983 Special Evaluation that USAID dropped its time-consuming and duplicative review and approval of particular rural works projects—transferring the responsibility to PCO/TSU. Today, more of the design and feasibility work is handled by the DTO's and the procurement of materials is in the process of being transferred to the districts—which, in any case, procure for other district-funded projects (such as those under the HMG grant-in-aid program or for special programs. However, PCO retains the final approval of projects on an interim basis pending strengthening of the DTO's.

2. Inputs

According to USAID data, 72 projects were approved and either completed or under construction, for a total estimated cost of US$ 2.07 million. This cost does not include the expenses of the PCO/TSU whose work has included technical support for building and construction projects for the District (see Annex 21) as well as for the small rural works program. The DTOs also are heavily engaged in this program as well as other rural development schemes in their districts. Project financial support to the DTOs for the period 1980-85 is calculated by USAID at Rs 0.9 million (or US$ 60,000 at an exchange rate of about Rs 15 = US$ 1.00).

Of the 72 projects approved to date, 53 were completed as of September 1985 (see Tables 14-1 through 14-5):

- Twenty-four drinking water systems;
- Ten minor irrigation projects (covering 429 has);
- Twelve bridges; and
- Seven trails.
Table 14-1: Drinking Water Schemes Approved and Completed Under the Project, 1980 - 1985

<table>
<thead>
<tr>
<th>District</th>
<th>Number</th>
<th>USAID Contribution (Rs '000)</th>
<th>Projects Approved</th>
<th>Number</th>
<th>USAID Contribution (Rs '000)</th>
<th>Projects Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>7</td>
<td>1,908</td>
<td></td>
<td>5</td>
<td>1,084</td>
<td></td>
</tr>
<tr>
<td>Pyuthan</td>
<td>7</td>
<td>2,269</td>
<td></td>
<td>3</td>
<td>318</td>
<td></td>
</tr>
<tr>
<td>Rolpa</td>
<td>5</td>
<td>861</td>
<td></td>
<td>4</td>
<td>733</td>
<td></td>
</tr>
<tr>
<td>Rukum</td>
<td>6</td>
<td>1,380</td>
<td></td>
<td>6</td>
<td>1,380</td>
<td></td>
</tr>
<tr>
<td>Salyan</td>
<td>8</td>
<td>2,528</td>
<td></td>
<td>6</td>
<td>1,062</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>8,946</td>
<td></td>
<td>24</td>
<td>5,297</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Population Served</th>
<th>Dang</th>
<th>Salyan</th>
<th>Rukum</th>
<th>Rolpa</th>
<th>Pyuthan</th>
<th>Rapti Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>81,466</td>
<td>15,401</td>
<td>24,805</td>
<td>22,534</td>
<td>16,159</td>
<td>160,365</td>
</tr>
<tr>
<td>Percentage of Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population Served</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>10</td>
<td>18</td>
<td>13</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Total Numbers of Schemes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>13</td>
<td>16</td>
<td>12</td>
<td>5</td>
<td>58</td>
</tr>
<tr>
<td>- Rapti IRDP</td>
<td>(8)</td>
<td>(6)</td>
<td>(6)</td>
<td>(3)</td>
<td>(2)</td>
<td>(25)</td>
</tr>
<tr>
<td>- UNICEF/HMG</td>
<td>-</td>
<td>(5)</td>
<td>(6)</td>
<td>(5)</td>
<td>-</td>
<td>(16)</td>
</tr>
<tr>
<td>- DWSS</td>
<td>(4)</td>
<td>(2)</td>
<td>(4)</td>
<td>(4)</td>
<td>(3)</td>
<td>(17)</td>
</tr>
<tr>
<td>Number of Taps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Rapti IRDP</td>
<td>91</td>
<td>29</td>
<td>31</td>
<td>36</td>
<td>15</td>
<td>202</td>
</tr>
<tr>
<td>- DWSS</td>
<td>172</td>
<td>50</td>
<td>75</td>
<td>72</td>
<td>58</td>
<td>427</td>
</tr>
<tr>
<td>Average Number of Taps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per Scheme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Rapti IRDP</td>
<td>11</td>
<td>5</td>
<td>5</td>
<td>12</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>- DWSS</td>
<td>43</td>
<td>25</td>
<td>19</td>
<td>18</td>
<td>19</td>
<td>25</td>
</tr>
<tr>
<td>Average Number of Persons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Served Per Tap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Rapti IRDP</td>
<td>131</td>
<td>82</td>
<td>129</td>
<td>136</td>
<td>96</td>
<td>122</td>
</tr>
<tr>
<td>- DWSS</td>
<td>404</td>
<td>207</td>
<td>176</td>
<td>175</td>
<td>254</td>
<td>282</td>
</tr>
</tbody>
</table>

Information not available for UNICEF/HMG Projects.

Note: These data cover all projects carried out between 1980/81 and 1984/85. Between 1973 and 1976 HMG/UNICEF/WHO installed seven Water Supply Systems in three districts in the Rapti Zone, but no information was readily available on these.

Sources: Project Coordination Office, Rapti IRDP; UNICEF; HMG, Department of Water Supply and Sewerage.
Table 14-3: Minor Irrigation Projects Approved and Completed Under the Project, 1980 - 1985

<table>
<thead>
<tr>
<th>District</th>
<th>Projects Approved</th>
<th>USAID Contribution (Rs '000)</th>
<th>Projects Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Dang</td>
<td>5 (616 ha)</td>
<td>1,440</td>
<td>5 (266 ha)</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>4 (93 ha)</td>
<td>505</td>
<td>3 (10 ha)</td>
</tr>
<tr>
<td>Rolpa</td>
<td>3 (127 ha)</td>
<td>882</td>
<td>4 (50 ha)</td>
</tr>
<tr>
<td>Rukum</td>
<td>3 (80 ha)</td>
<td>304</td>
<td>6 (56 ha)</td>
</tr>
<tr>
<td>Salyan</td>
<td>3 (72 ha)</td>
<td>282</td>
<td>6 (47 ha)</td>
</tr>
<tr>
<td>Total</td>
<td>18 (998 ha)</td>
<td>3,415</td>
<td>10 (429 ha)</td>
</tr>
</tbody>
</table>

**Source:** USAID, September 1985.

*Estimated.*
### Table 14-4: Bridge Projects Approved and Completed
Under the Project, 1980 - 1985

<table>
<thead>
<tr>
<th>District</th>
<th>Number</th>
<th>Projects Approved USAID Contribution (Rs ‘000)</th>
<th>Projects Completed USAID Contribution (Rs ‘000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>1</td>
<td>265</td>
<td>0</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>4</td>
<td>479</td>
<td>4 496</td>
</tr>
<tr>
<td>Rolpa</td>
<td>4</td>
<td>1,293</td>
<td>4 1,293</td>
</tr>
<tr>
<td>Rukum</td>
<td>2</td>
<td>24</td>
<td>2 24</td>
</tr>
<tr>
<td>Salyan</td>
<td>3</td>
<td>745</td>
<td>0 417</td>
</tr>
<tr>
<td>Total</td>
<td>14b</td>
<td>2,824</td>
<td>12 2,031</td>
</tr>
</tbody>
</table>

*aEstimated.

*bOf which eleven were suspension bridges and three were wooden bridges

NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION

Table 14-5: Trail Improvement Projects Approved and Completed Under the Project, 1980 - 1985

<table>
<thead>
<tr>
<th>District</th>
<th>Projects Approved</th>
<th>Projects Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>USAID</td>
</tr>
<tr>
<td></td>
<td>(Rs '000)</td>
<td>Contribution</td>
</tr>
<tr>
<td>Dang</td>
<td>1</td>
<td>250</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>1</td>
<td>250</td>
</tr>
<tr>
<td>Rolpa</td>
<td>1</td>
<td>277</td>
</tr>
<tr>
<td>Rukum</td>
<td>3</td>
<td>600</td>
</tr>
<tr>
<td>Salyan</td>
<td>1</td>
<td>500</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>1,877</td>
</tr>
</tbody>
</table>

*Estimated.

3. Outputs

a. Drinking Water Systems

Through August 1985, 33 drinking water systems in 32 villages were approved. Of these, 24 were completed, while nine are still under construction. Drinking water systems range in size from three to 21 taps. The technical requirements include covered storage to help insure uncontaminated water at the tap. In general, the source of water is a spring. Table 14-1 provides information on the projects approved and completed between 1980 and 1985.

In the Rapti Zone Regional Assessment, PADCO analyzed data on the coverage of drinking water systems (DWS) in the Rapti Zone based on systems constructed between 1980-1985 by the Rapti Zone Project, by UNICEF, and by the Department of Water Supply and Sewerage. Based on design estimates, these systems serve a total of about 160,000 persons, or 17 percent of the population (see Table 14-2). The DWS projects financed by the Rapti Project served about 35,000 persons.

The Regional Assessment noted that drinking water systems in Rapti Zone: a) were not being completed due to shortage of funds; b) were becoming contaminated in the most complicated systems; c) had inadequate water flow during the dry season; and d) were subject to poor maintenance and break-downs. Shortage of funding has not been a problem with Project schemes although delays in provision of materials and lack of construction supervision has been. Contamination has not been identified as a problem in Project drinking water systems but it is recognized that not all systems have provided fences and other measures to protect sources (usually mountain springs) and the covered reservoirs from contamination. Project DWS have been designed to operate year round based on dry season water flow; however, some communities have added additional taps to their systems making it necessary intermittent supply. The 1984 PCO evaluation of Project drinking water systems showed that all completed systems were operative; nevertheless, it is recognized that these systems were relatively few at the time of evaluation. Maintenance of the systems is a concern which village leadership will need to respond to and which District Technical Officers will need to address by arranging for training, spare-parts support and guidance on preventative maintenance.

b. Minor Irrigation

Through August 1985, eighteen minor irrigation project were approved, and ten completed (see Table 14-3). The total command area under the approved projects is 988 has, of which an area covering 287 has is new irrigation.
c. **Suspension Bridges**

As shown in Table 14-4, through August 1985, 14 bridge construction projects have been approved and 12 completed.

d. **Trails**

Seven trail improvement projects were approved. All seven were completed, as noted in Table 14-5.

4. **Related Activities by Other Agencies, Donors, etc.**

UNICEF has a small program to install drinking water systems (DWS). According to the PADCO Regional Assessment Study (Draft), UNICEF/HMG installed seven DWS between 1973 and 1976 in three Rapti Zone districts. In addition, UNICEF constructed five more in 1979/80 in the pilot phase of the project with USAID financing. Between 1980-85, UNICEF constructed sixteen more in Salyan, Rukum and Rolpa using its own funding.

The Department of Water Supply and Sewerage installed seventeen DWS in Rapti Zone in the period 1980/81 to 1984/85.

With Swiss assistance, HMG/N is conducting a national survey of important market access/communication trails which has been completed for the Rapti Zone.

CARE has initiated a program, in September 1985, to develop ten minor irrigation projects to be funded by the ADB/N, CARE’s costs are being funded by the Project in Nepali FY 1985/86.

5. **Problems and Constraints Encountered**

The cumbersome process of requiring USAID and PCO approval of each individual local project delayed implementation of this program during the first three to four years.

A major constraint was the limited capacity of and lack of qualified DTO staff to carry out feasibility and design work and to help villagers and local users group with the construction and works supervision. The assignment of qualified civil engineers to these remote posts was difficult. It is only now being partly resolved as more civil engineers become available and working and living conditions in the five districts improve. The lack of qualified overseers, sub-overseers, supervisors and draftsmen was and remains a problem which requires a vigorous training and recruitment effort to solve.

Users groups were not always effective. They often were not involved sufficiently in the planning and design phase of their projects. Enough training and guidance was not provided for their operation and maintenance of the works.
E. Measurement of Progress

In five years, about one-third of the work planned was accomplished. Progress was most encouraging in DWS, which are very high on the priority lists of local communities. Even so, progress accomplished was only about half that envisaged.

The bridges and trail component of the program resulted in the construction of 12 bridges and the improvement of seven important trails. This amounts to less than one-third of the work planned.

Progress on minor irrigation was disappointing. The project envisaged that 3,100 hectares of new or improved minor irrigation would be developed over the five-year period. Through August 1985, only ten projects (429 hectares) were completed. They are mostly improvement of existing system. Even with the completion of all approved projects (in a year or two) only one-third of the project goal will have been achieved.

F. Findings

The rural works program has contributed importantly to the objective of developing local participation in development. Villages and users groups have demonstrated a willingness and capacity to mobilize their own resources and to plan, design, construct and manage and sustain local development—when they are provided technical assistance and guidance and with the assistance of relatively modest external inputs. Many examples of this can be cited, including school improvement (carried out by local education committees under the education program—see Annex 19), local drinking water systems, and local minor irrigation projects. However, because of poor or inadequate Project organization and management, one can also point to instances where this pattern of effective local participation was not in evidence.

The direct impact of Rapti drinking water systems on small, poor, isolated communities is impressive and should not be discounted lightly. The schemes are concrete evidence of effective cooperation among Villagers to achieve development objectives that the community wants. The schemes resulted in a very positive impact on community health through the provision of more and cleaner water. They also resulted in savings in time for women in fetching water, from 20 to 30 minutes to up to four hours per trip, time that can be used for other household income or management functions.
The potential impact of improved trails and bridges is well brought out in the USAID-funded study on Rapti Zone market and pricing policy. Unfortunately, the PCO has not analyzed the impact of the seven trails and 12 bridges which have been improved and constructed. The PCO Planning, Monitoring and Evaluation Unit should undertake such a study as a matter of priority.

The impact of the one minor irrigation project the team was able to inspect was positive. A traditional system, serving several hundred persons with an effective users committee, was safe-guarded from a major threat to its main canal. The local contribution in labor in this case far exceeded the 20 to 25 percent foreseen in the ProAg.

G. Conclusions

1. General

The small rural works program conducted under the Project has contributed importantly to the process and objective of fostering local participation in development and of increasing district and village capacity to plan and manage local development activities.

Targets established in 1980 for the program have not been achieved due to a very slow part attributable to each of trained personnel in DTOs and cumbersome approval procedures.

Drinking water systems have had an important effect on the quality of life, community on health and on labor productivity particularly female productivity. An integrated approach should be undertaken in each district with respect to: a) guidance and assistance to villages for adequate maintenance of existing and new systems; and b) planning and implementing new systems to increase the proportion of rural population with access to clean water.

Development of mule trails is critical to improved market access for more of the villages in hill areas of the Zone. The development of trails should be planned to ensure construction of necessary bridges, with an eye to improving delivery of farm inputs and in consonance with District planning for market center development.

Accomplishments in developing minor irrigation have been disappointing. A careful study is needed to assess the reasons and the potential for minor irrigation development. It appears that the project design assumption that: a) substantial additional sources of water could be readily tapped for minor irrigation may not be correct, at least in more hill and valley areas; and that emphasis may need to be placed more on helping villages improve efficiency of existing irrigation systems—including increased use of improved seeds and modern inputs, higher-value crop production where feasible, and

construction of small tank storage systems where feasible. It appears that district capacity to advise and assess villages in minor irrigation is severely limited by lack of qualified staff.

2. Conclusions regarding manageability

The ability to manage development schemes by local communities and by districts was greatly improved by Project rural works activities. Communities in the Zone demonstrated their willingness and ability to manage local development and to mobilize resources for it. This capacity needs further strengthening by training for village officials, by guidance and TA from the district and by adult education/functional literacy programs (see Annex 19).

The increased capacity to manage local development at the village and district level offers opportunities to expand local development initiatives to other important areas, including village skill training, soil conservation, community forestry development, pasture improvement, fodder tree production, local market development. The shift of the School Improvement Program, previously carried out under the Education component of the Project, to the local development rural works program under the DTO, is a desirable development.

3. Conclusions regarding sustainability

Villagers can sustain these local development schemes with minimum outside assistance, as evidenced by existing examples in the area. Sustainability is a function here of village leadership, organization and political will. It is strengthened by decentralization, training, district assistance to organize O and M properly and to provide special TA when needed.

4. Conclusions regarding local capacity and private resource mobilization

There is no question that this program, where it has been properly carried out, fostered an increase in local capacity to manage development and to mobilize private resources of the community. However, many examples were brought to the teams' attention of where the program was not properly managed.

H. Recommendations

- The small rural works programs should be recast and included as part of a considerably broader local development program implemented from the District. The expanded local development program should include the successful School Improvement Program previously carried out through District and local education committees. It should also include other development activities of importance to villages (and selected, implemented and managed by them), including production-oriented activities for agriculture, livestock,
forestry (i.e., land use planning, pasture improvement, fodder, tree production, village crop production campaigns, community forestry development) and activities to upgrade human skills, including training and literacy programs;

- Full responsibility for this program should devolve to the Districts. PCO should withdraw from activity/design approval by no later than the end of 1986. Specific programs should be developed and carried out as soon as possible to strengthen all DTOs sufficiently to manage these programs;

- A study should be carried out to define more clearly the potential for minor irrigation and measures to support most efficiently and effectively village efforts to make better use of existing irrigation and additional irrigation possibilities, particularly in the hill areas; and

- A study should be made of the potential and need for improved market access in the hill areas by the improvement of rural trails, district by district.
ANNEX 15

Office and Other Buildings
ANNEX 15

Office and Other Buildings

A. Summary

The office and other buildings component of the project was a part of institution building to support rural development efforts and help the HMG to continue project initiated services after project completion. The constructed office buildings, godowns, quarters and training centres were fully used. In remote areas like Rapti Zone, where the staff are reluctant to accept assignments, the quarters and office buildings provide somewhat better attraction. Minimum office housing in the district and especially at the service centres are permanent assets for the rural populace receiving services.

B. Purpose

The purpose of the office building component of the Project was to promote institutional development and service delivery through the construction of office buildings, storage facilities, training halls and service centres.

C. Background

The Feasibility Study of Rapti IRD recommended construction of 25 multi-purpose panchayat community centres (five per district) with rest houses and small training halls at the multi-village panchayat service centre level. The proposal was also for construction of five multi-purpose training centres at the District level (one per District) for conducting various training activities and for meetings of local communities, leaders, etc.

The PP specified that USAID would provide US$ 4.177 million for constructing a total of 277 buildings (estimated 20,000 square meters) ranging from housing for technical assistance to 150 sq.ft. "visiting offices" for ADB/N loan officers. The HMG contribution of US$ 0.291 million was to be made up of local contributions for school upgrading. Estimates were based on utilization of locally available materials—e.g., mud/brick, stone, and slate—where possible. The ProAg did not mention the office buildings as a separate component, although it did refer to the establishment of service sub-center.

The 1983 Special Evaluation recommended that the use of privately leased office facilities should receive precedence over new government construction.

The Project Extension Paper emphasized three areas in infrastructure development and mentioned rural service centres as one of the areas. The Paper notes that,
there are now three active service centers in each district and an additional two per district are planned for the extension period. To date construction of service centers has been done by the PCO; as district capabilities improve, both design and implementation authority will be transferred to the districts.¹

D. Description of Activities and Program Carried Out

1. Organization and management

Office construction at the District level was managed by the DTOs. The construction of service centers, however, was managed by the PCOs.

2. Inputs

US$ 4.0 million was allocated for the improvement and construction of buildings in the Zone within the project period.

3. Outputs

The Project authorized construction of 50 buildings. They cover a total floor area of 13,750 square meters and cost US$ 1.8 million. Twenty-five of the building projects were completed, at a cost of US$ 1.05 million.

4. Related Activities by Other Agencies, Donors, USAID

During the past five years, the Asian Development Bank supported the upgrading and/or construction of Livestock centres in three districts of the Zone as well as a quarantine section on the Indian border in Dang—estimated cost, US$ 100,000. The Netherlands Leprosy Relief Association built two district hospitals and six health posts at an estimated cost of US$ 10 million. Two health posts are under construction in Rolpa. Two 16-bed hospital buildings are under construction with USAID support in Salyan and Pyuthan.

E. Problems and Constraints

Major problems in the office buildings component included the following:

- Contractors building the structures were mostly unqualified ones—chosen largely via political influence;

¹PEP, p. 17.
Building designs were based upon use of transported materials and techniques in most places. They required imported materials like cement, iron bars, CGI (corrugated tin roofing) sheets, etc. There were not readily available in Tulsipur and even when available, their transportation to the hill districts was difficult, costly and time consuming;

- Technical construction manpower was limited in most districts; and

- The rules and regulations of the Department of Forest have slowed receipt of construction timbers and delayed construction in Rukum.  

**F. Findings**

The Project approved 50 building construction activities, covering 69 percent of the project's target of 20,000 square meters. Provision was made in the PP to utilize locally available materials including brick, stone, and slate where possible. Local resources were used but imported were also used; sand was carried from Ghorahi to Dholabang for cement plaster. In Musikot, reinforced concrete in the forest range office construction was an expensive misuse of resources.

Most of the problems of delay and incomplete work were due to contractor problems—-in Rukum as well as Pyuthan (Devisthan Sub-centre). In general, the quality of the work in all the Districts except for the DTO office in Rolpa was poor. Construction of all the buildings of five service centers has been approved by the Project, but none of these has been completed.

The AIC godowns, district godowns, training and other types of completed construction facilities are being utilized fully. Better office and housing for district and service center staff has created a better work environment. Moreover, the completed construction has already made a positive impact on office staffing.

**G. Conclusions**

District officials or service center officials with offices constructed by the Project have a better environment to work. Training halls, godowns and other types of structures have improved services to the productive sectors of the economy. The use of non-local materials in constructing these buildings has been a constraint in term of both the speed of construction and the ability of the local people to help.

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2A contractor can get the necessary timbers only if an HMG official provides a bond for DOF. This proved necessary to control misuse of the timbers by contractors.
Overall, the office building program, while beneficial, has not been a particularly useful input; other inputs were more needed but not supplied.

H. Recommendations

Office buildings, while easy for USAID to supply, should be provided to a maximum extent in the Zone by other means. Thus, office buildings for which Project funds already are committed could be completed with such funds. The HMG can itself build office buildings. The HMG should as frequently as possible arrange for needed buildings to be constructed by the private sector, with commercial bank financing, for lease back to the government.
ANNEX 16

Appropriate Technology Unit (ATU)
ANNEX 16

Appropriate Technology Unit (ATU)

A. Summary

The Agricultural Development Bank of Nepal (ADB/N), with funding from Rapti RAD Project, established an Appropriate Technology Unit (ATU) in Tulsipur, Dang in 1981. During the past four years, the ATU has developed an effective program of dissemination of proven technologies in Rapti Zone. Fifty-six turbine driven mills have been installed, over 127 bio-gas plants are operating, more than 536 families have improved stoves, and 406 farmers have new grain storage bins. The ATU has also stimulated more than a dozen other private enterprises. A large number of other technologies are being tested. Problem areas of the ATU requiring further attention and resolution include training of new technical staff to replace those who leave the program, a decision on how subsidies should be used to support technology dissemination, and more expansion of the program in the hill districts of Rapti Zone. The success of the ATU has attracted the attention of project planners and plans are being developed for new AT centers in other parts of Nepal, for which the present experience of ATU will be valuable. These should be combined into a nationwide approach to ATU. Given that AID’s indirect (operating cost) and direct (product) subsidy have not led to institutionalization of the program, a three-year, sliding-scale fund for the ATU program should be provided during the last year of the current project. During this period, this promising program can try to find a nationwide institutional home.

B. Purpose

The purpose of the ATU was to identify, test and disseminate new and improved technologies to small farmers and private entrepreneurs, to improve their production.

C. Background

The Rapti Zone IRDP feasibility study recommended inclusion of an Alternative Energy/Appropriate Technology component in the Project, the objective being the development, adaptation, promotion and dissemination of improved technologies in the Zone. The technologies would help protect the environment (e.g., improved stoves or chulos) and reduce losses resulting from agricultural processing and storage. The proposal specified five different action programs—improved chulos, bio-gas, solar driers, improved water mills and farm storage bins. The Project Paper included this sub-component under the employment and skill development program component, and noted as follows:
Appropriate Technology/Alternate Energy Unit: A small unit staffed jointly by professionals secured from the ADB/N and by the PCO will be established at Ghorahi to undertake two important tasks: (a) supervise and/or undertake feasibility and marketing studies of selected local industries, including ginger, milk products, chiuri, pottery and tile, and small scale hydropower and (b) undertake research and development on locally adapted "appropriate"technologies to support local industry, including and sharing of proven designs with local artisans and entrepreneurs. Emphasis for the latter will be on technologies designed to increase energy efficiency and to improve the quality and quantity of food processing and storage in the Hills. Existing local organizations, such as the District Women's Organizations and Small Farmer Development Program groups, will receive priority attention for pilot activities and prototype development and participate in the evaluation and adoption of the technologies to local conditions.

Additionally, the ATU will share workshop facilities with the Gobar Gas and Agricultural Equipment Development Company (Pvt.) Ltd. to enable them to undertake local manufacture of components for up to 200 bio-gas plants during the five year period.1

The PP specified USAID support to the ATU over the Project period would be US$ 0.65 million. The ProAg provided the money specified in the PP through the ADB/N for equipping and operating the ATU, attached to the PCO. The ProAg called upon the PCO to draw the expertise of various institutions together to achieve the objective defined in PP and the feasibility study report.

The mid-term evaluation (MTE) report of 1983 noted the following:

The unit (ATU) under the ADB is off to a good start with a number of interesting technological innovations. One of the activity's strengths is its use of private entrepreneurs and groups to manufacture and sell the equipment. Work is currently concentrated on bio-gas units, water turbine grain-oil mills, grain storage containers, improved beehives, fuel conserving stoves, water jar and solar dryers. The water turbines are particularly popular and result in both private manufacture of the equipment and small private milling operations. Thirteen are now in operation and eighteen additional sites identified. Sixty bio-gas units have been

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1PP, pp. 11, 12.
installed. Though they are expensive, design work is underway for a low cost unit. The work of this program could be expanded as low-cost technological innovations are tested and proved feasible.2

D. Description of Activities and Program Carried Out

1. Organization and management

The ADB/N, with funding from the HMG/USAID/IRDP established (in 1981) an Appropriate Technology Unit in Tulsipur, Dang in a rented building. The special credit program of ADB/N assisted ATU to conduct adaptive research to modify local technologies or introduce new technologies that appear relevant to conditions of the Rapti Zone. The ATU worked with local entrepreneurs and farmers, provided training, and helped finance, with c.i.f. through the ADB/N, promising technologies. The ATU had 59 approved staff positions, of which 48 were filled.

2. Inputs

Table 16-1 shows budgeted amounts and expenditures for the ATU between 1980/81 and 1984/85. Over the five year period, Rs 3.29 million was expended by USAID on the program.

3. Outputs

The ATU's program achievement included dissemination of 538 smokeless earthen stoves, one hydraulic ram, 79 improved beehives, eight manual pumps, 406 storage bins, 56 turbine mills, 127 bio-gasplants, 15 shallow tubewells and one periodic market.

ATU's special program conducted adaptive research and extension and made two films, two farmer visits, one village electrification effort, carried out feasibility studies of 132 water turbine mill sites, and carried out detailed surveys of 73 water turbine mill sites. The ATU did three feasibility studies of village electrification project, helped 4 private entrepreneurs, and tested low cost bio-gas plants at 18 sites. It also demonstrated new technologies covering a range of activities: rice transplanter, rope making, hydraulic pumps, solar driers, hand pumps, rotor pumps, paddy thrashers, booster pumps, and bio-gas operated mills. The ATU also helped establish three stores and three smokeless stove distribution centers.

ATU training provided a total of 1797 person-days (p-d) of training at a cost of Rs 91,708 in fields such as bio-gas (men--141 p-d; women--44 p-d); water-turbine (men--6 p-d); improved-stove (men--785 p-d; women--5 p-d); bee-keeping (men--686 p-d; women 17 p-d); and other areas (men--50 p-d).

2MTE, p.34.
Table 16-1: Budgeted amounts and Expenditures on ATU, 1980/81-1984/85 in Rs

<table>
<thead>
<tr>
<th>Fiscal Year US</th>
<th>HMG</th>
<th>Total Budget</th>
<th>Total Expenditure</th>
<th>Expenditure as % of Budget</th>
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<tr>
<td>1980/81 (2037/38)</td>
<td>-0-</td>
<td>-0-</td>
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<td>1981/32 (2038/39)</td>
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<td>1984/35 (2041/42)</td>
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<td>3,289,383.01</td>
<td>54.01</td>
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</tr>
</tbody>
</table>

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*aAll expenditures are on Zonal basis as the program is a Zonal one.

Source: USAID, Rural Development Office.
Most of ATU’s activities were concentrated in Dang District, because its office was located at Tulsipur. In recent years, however, ATU set up operations through the ADB/N offices in other districts so that wider dissemination was more possible. Recently, ATU posted one technician to each of the four ADB/N branch offices in the four Hill Districts of Rapti Zone. These technicians, attached to the bank offices, are responsible for initiating ATU programs.

Peace Corps Volunteers (PCVs) have been actively working with ATU extension agents, local entrepreneurs and credit institutions in three Rapti Zone Districts. The type and nature of activities of one PCV in Rolpa District is presented in Annex 16-I.

E. Related Activities by Other Agencies, Donors, and Projects

Governmental and semi-governmental organizations supporting appropriate technology in Nepal are:

- Royal Nepal Academy of Science and Technology (RONAST);
- Research Centre for Applied Science and Technology (RECAST);
- Agricultural Development Bank of Nepal;
- National Energy Commission; and
- Institute of Engineering.

Developers and manufacturers involved in appropriate technology activities include:

- Balaju Yantra Shala, Pvt. Ltd.;
- Nepal Yantra Shala, Pvt. Ltd.;
- National Structure and Engineering Co., Pvt. Ltd.;
- Butwal Engineering Works, Pvt. Ltd.;
- Development and Consulting Services (DCS);
- Gobar Gas and Agricultural Equipment Development Co., Pvt. Ltd.;
- Kathmandu Metal Industries; and
- Agriculture Tools Factory.

Donor and related agencies supporting appropriate technology approaches and activities in Nepal are:

- UNICEF;
o Community Forestry Afforestation Division of the Department of Forest (CFAD);

o Integrated Rural Development Projects (IRDPs);

o Swiss Association for Technical Assistance; and

o Gesellschaft fur Technische Zusammenarbeit (GTZ).

A report by Jantzen\textsuperscript{3} provides information on the appropriate technology activities and programs of the above organizations.

F. Problems and Constraints

1. National-Level

Two constraints to the development of appropriate technology exist in Nepal:

o No organization in Nepal is responsible for formulating appropriate technology policy. RONAST, RECAST, ADB/N, and the National Energy Commission all play some role in directing appropriate technology efforts, but none have a mandate for leading in policy formulation and implementation. Overlapping and duplication of effort, although not a serious problem as yet, will occur if coordination is not improved; and

o Distribution of appropriate technologies is weak, and no organization fills the void. This prevents appropriate technologies from reaching the majority of the rural population.

2. The ATU Program of Rapti Project

a. Technical staff problems

Work required of a mechanical or civil overseer in the ATU is quite different from the training he has received or his previous experience. ATU's experience has been that it requires approximately one year of on-the-job training to develop a reasonable level of competence and confidence in a fresh technician. It is difficult to retain such technicians in the ATU program for long because of the present ADB/N rules and regulations, which are designed more favorably for regular career development in ADB/N than for ATU. Once trained technicians leave, it becomes even more difficult to find and train new ones. The salary scale of HMG is too low to attract good technicians in the ATU programs. The ATU needs to constantly train new technicians.

technicians, because many of the experienced ones leave just as they are becoming useful to the program. There is not an adequate training course and program specially designed for AT technicians.

b. Subsidies

There are no guidelines for how ATU (and other project sub-components) should use subsidies. Improved chulos and storage bins are sold with subsidies in some places and without subsidies in others. Questions of subsidies within subsidies also arise, both within ATU and between ATU and the other sub-components of the project. Storage bins supplied to farmers through the agricultural extensionists at sub-centers, for example, have a 50 percent subsidy. The ATU is a subsidized program; it subsidizes storage bin manufacturers, who sell their product to the sub-centers, which in turn subsidize the farmer. Some bins are purchased with subsidized credit through ADB, SFDP, or PCRW.

c. Expansion to Hill Districts

The ATU has not been able to provide adequate support in the Hill Districts, especially for small technologies involving many units. ATU's program of posting one technician in each of the Hill Districts began only three months ago, and the technicians posted are not adequately trained.

3. Field observations

The team observed a number of problems and constraints in ATU activities in the field:

- There are no well-equipped workshops or hardware shops in Rapti Zone, and ATU does not have its own. As a result, to obtain even a small nut or a pin, someone has to go to Butwal or Nepalganj;

- Some farmers who installed improved chulos in their houses threw them away (thinking them useless) when the chimney pipe blocked. They did not know how to clean and fix them, or that it was necessary;

- Unlike the traditional ghattas, water turbine mills generate very fine dust in flour milling. The fine dust, when inhaled, can be the cause of emphysema. The mill operators need to use simple cloth face masks;

- Bio-gas plant owners in Dang seek ATU assistance for just about any problem (minor or major), due to their lack of sufficient training;

- In some areas, over-marketing of turbines has resulted in either closure or unprofitable business for all of the owners;
An SFDP group in Rolpa borrowed money and installed a turbine mill, which ran profitably. Some group members, afraid of the financial risk, left the group, jeopardizing an otherwise successful program; and

Many households which installed improved (smokeless) chulos reported increased numbers of insects in their houses. This is an obvious result of the lack of smoke, but people were not informed of this result before obtaining their stoves.

G. Findings and Conclusions

1. Measurement of progress

The ATU, in its four years of operation, has developed an effective program of proven technology dissemination. Fifty six turbine-driven mills were installed. Over 127 bio-gas plants were disseminated, more than 538 families received improved stoves, 406 farmers got new grain storage bins and more than a dozen private enterprises were stimulated.

The success of the ATU has attracted the attention of project planners. Plans are being developed for appropriate technology centers in other parts of Nepal. The experience gained by the ATU, is useful in developing the plans for these additional centers.

2. Contribution to project objectives

ATU activities contributed directly and indirectly towards the contribution of project purposes. It assisted private enterprise development. Where the people adopted them, ATU sponsored technologies have provided farm employment opportunities, profitable skills income generation, and conservation and utilization of renewable resources.

3. Cost effectiveness of ATU activities

On an individual basis, the activities of ATU are cost effective to their beneficiaries, as is clear from some of the examples given below:

- The turbine mills, which cost between Rs 50,000 to Rs 100,000, if well managed frequently pay for themselves in two to three years.\(^4\)

- Bio-Gas Plants of Gobar Gas Co.--with a 15 cubic meter capacity for normal household use--cost Rs 14,576; a recent study\(^5\) calculates a financial IRR of over 50 percent and a pay-back period of five years in Dang; and

\(^4\)Ibid.

A smokeless earthen stove may cost Rs 70 to Rs 100 and is at least 25 percent more efficient in the consumption of fuel wood.

4. Manageability and sustainability

Both the ATU and ADB/N are well managed by capable people and have developed an institutional basis and programs for proven technology dissemination in Rapti Zone. However it will be a long time before the rural farmers of Rapti Zone can pay for the services of ATU, given the substantial costs of overhead and product subsidy, which have heretofore been paid in full by the Project.

G. Recommendations

The success of the ATU, although limited, suggests that appropriate technology dissemination in Nepal should be considered as a national program. Recommendations for strengthening the ATU program are given in Jantzen’s report; and

The ATU subsidy and operating costs should not be continued under the follow-on project. Rather, the ATU should receive three years’ terminal funding (on a substantially sliding scale) during FY 1986. During that period, the ATU should seek to institutionalize itself by a combination of foreign and domestic nationwide support and lowering its use of subsidies to sustainable levels.

6Jantzen, Rural Areas of Nepal.
ANNEX 17

Cottage Industry
ANNEX 17

Cottage Industry

A. Summary

The need for sustainable off-farm income, building on existing skill potential and using local materials as much as possible, has not been met by the cottage industry component. The "imaginative approach" called for in the 1983 Special Evaluation did not materialize; (however, see Annex II on the HPS). This component should be withdrawn from the Project and an agreed-upon level of activities should be supported by the World Bank-assisted Cottage and Small Industry project.

B. Purpose

The purpose of the cottage industry component was to provide training and extension services in traditional skills activities as well as support services (i.e., raw materials, technology and marketing outlets) to trainees and other entrepreneurs throughout the Zone.

The PP included this activity under the program component for employment and skills development, noting that

"Although mixed farming will probably continue to provide primary employment for most people in the Zone for many years to come, alternative employment for those with little or no access to land and enhancement of basic skills for younger people in particular are important if development of Rapti Zone is to become self-sustaining. Emphasis on both agro-based and non-farm industries and services will support the farming sector as well as provide increased income for the disadvantaged."

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C. Background

The feasibility study mentioned that

Training will be offered in six trades: cotton textiles, wool textiles, bee-keeping, cane and bamboo work, carpentry, leather work, and smithery. The project will provide trainees with

1PP, p. 10.
equipment and raw materials after they have completed their training and will also arrange marketing channels for their products.²

It defined the main aims of the Cotton Industry component as the provision of off-farm employment for the poor farmers and for unemployed or under-employed people.

The PP specified that approximately 900 individuals would be trained in technologies and skills to increase production and productivity in indigenous light industries such as woolen textile manufacture, bamboo and cane work and blacksmithing. Training in most of these activities was intended for part-time and off-season labor and for those people who have less access to productive resources at any time of the year, i.e., the poorest farmers, landless, occupational castes, disadvantaged ethnic groups and women. Where feasible, key local artisans from occupational castes were to receive training as trainers to promote techniques and technologies and encourage the development of local initiatives. The project was to support these activities through the expansion and improvement of technical personnel, training, and support facilities through the Department of Cottage and Village Industries (DCVI), the Cottage Industry Development Board (CIDB) and the Cottage Industries and Handicrafts Emporium (Emporium).

The Project Agreement specified that the project would support local training of artisans and marketing development for light industry through DCVI, CIDB and the Emporium. AID was to provide approximately US$ 550,000 to these organizations for these purposes over the five-year period, of which approximately US$ 50,000 was credit for trainees.

The 1983 Special Evaluation concluded that

The need for effective sustainable off-farm income generation activities for the Rapti Zone households, particularly in the Hills is critical. As income patterns suggest, any opportunity for moving incomes above the subsistence level rests on the creation of alternative income sources for the village households. However, there is a lack of imaginative approaches and a reliance on a pattern of conventional activities. There is a heavy use of imported materials with some good exceptions. Markets are not clearly defined and developed. Earning margins are too low. We recommend that a substitute be developed for this component of the project. The Mission and HMG should prepare a new

²APROSC, Feasibility Study, pp. 49-50.
strategy for Small Rural Industry Development carefully built on market opportunities for private individuals or group undertakings.3

The World Bank is sponsoring a Cottage and Small Industries project for US$ 12 million with IDA funds and technical assistance. This project is in support of five sub-sectors: woolen carpets and garments, cotton handloom products, metal crafts, forest products and selected agro-industries. The Bank estimates there is considerable export potential for these products. The HMG has recently (Summer, 1985) proposed to the Bank an extension of the CSI project to an additional 19 Districts nationwide, including Dang, Salyan, Pyuthan and Rolpa. This Phase II CSI activity would go beyond the original five sub-sectors and encourage industries based on local resource potential.

D. Methodology

Basic data on the Cottage Industry Component, updated through mid-1985 by the USAID and Project Coordinator’s Office, was used in this evaluation. This data was verified and supplemented with information obtained at the district level. Field work included visits to many villages in the five districts where Textile Handloom and Hosiery (knitting) efforts were being undertaken. Team members met with many local persons including weavers, owners of power looms, trainers and trainees and village leaders. In addition, the Team interviewed Cottage Industry Branch, Cottage Industry Development Board and Cottage Industry Emporium District Officers in Rukum, Salyan, Rolpa, Pyuthan and Dang Districts. This Team also met with the officials of the Cottage Industry Development Board people in Kathmandu.

E. Description of Activities and Program Carried Out

1. Organization and management

The program was managed by the DCVI’s Cottage Industry Development Board Department and the Emporium through district-level offices. The CIDB managed training and entrepreneurial promotion while the Emporium was to furnish raw materials, tools and machinery and provide marketing services. Under the Project, the CIDB was to train people in specific skills whom the Emporium would then help in the means of production and marketing. Unfortunately, cooperation between the CIDB and the Emporium was not effective and the Emporium never did act to market goods produced by the persons trained by the CIDB.

3MTE, p. 287
2. Inputs

As shown in Table 17-1, total expenditure was Rs 4.4 million of which Rs 2.5 million was financed by HMG and Rs 1.9 million by USAID.

3. Outputs

a. Cottage Industry training achievement

A total of 1,715 people received Cottage Industry training on different subjects as shown in Table 17-2.

The target for training was achieved. However, of 1,715 trainees (470 were in cotton textile production and 372 in sewing), most did not end up working in these fields.

Table 17-3 shows the number and kinds of training carried out in Salyan District. Only cutlery service, shoe, churi ghee, murali, curio and smokeless stoves were still on-going as of August, 1985 at their registered level. These are the traditional skills and products people use in the villages. Where nontraditional skills were involved, Cottage Industries activities were less successful.

b. Cottage Industry Handicraft Emporium sales

Table 17-4 shows that total sales of the Emporium in 1981/82 was Rs 620,000, while administrative expenditure was Rs 260,000. In 1983/84, administrative expenditure was more than sales, but sales exceeded such expenditures in 1984/85. By 1984/85, total sales had increased to Rs 1,252,000.

F. Related Other Activities

The CSI project financed by the World Bank carried out a survey in the Rapti Zone in 1985. The HMG has proposed that the CSI program be expanded to an additional 19 districts, including four in the Rapti Zone in its second phase. Dang, Salyan, Pyuthan and Rolpa were chosen for their accessibility and production and marketing potential. HMG sources expect project approval in 1986.

The Intensive Banking Program, i.e., the Primary Sector Priority Program conducted by the commercial bank in this area, also is financing the Cottage Industry Program.

One successful case of cottage industry activity is in the village of Lamahi. Forty-two people in Lamahi have received loans from the Nepal Bank, Ltd. to establish cottage industries. This group leased cooperative land at Rs 50 per month per industry and began the following activities:
NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION

Table 17-1: Budget and Expenditures for Cottage Industries Component 1980/81 - 1984/85 (Rs '000)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Total Budget</th>
<th>Budget Releases</th>
<th>Total Expenditures</th>
<th>USAID Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>US HMG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980/81 (2037/38)</td>
<td>1,550</td>
<td>394</td>
<td>648</td>
<td>617</td>
</tr>
<tr>
<td>1981/82 (2038/39)</td>
<td>2,243</td>
<td>2,237</td>
<td>1,351</td>
<td>541</td>
</tr>
<tr>
<td>1982/83 (2039/40)</td>
<td>2,962</td>
<td>2,178</td>
<td>1,766</td>
<td>352</td>
</tr>
<tr>
<td>1983/84 (2040/41)</td>
<td>2,450</td>
<td>2,401</td>
<td>637</td>
<td>414</td>
</tr>
<tr>
<td>Total</td>
<td>9,205</td>
<td>7,210</td>
<td>4,402</td>
<td>1,924</td>
</tr>
</tbody>
</table>

1Cottage Industry expenditures by District are as follows (total expenditures reported through August, 1985):

- Dang: 43.2 percent
- Pyuthan: 9.2 percent
- Rolpa: 24.0 percent
- Rukum: 8.0 percent
- Salyan: 17.7 percent

### Table 17-2: Breakdown of Training Achievement by Occupation and District

<table>
<thead>
<tr>
<th>District</th>
<th>Total</th>
<th>H'ry</th>
<th>C.Tex</th>
<th>B.Sth</th>
<th>D.Wve</th>
<th>Sew</th>
<th>Cpt</th>
<th>G.Prc</th>
<th>Stov</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>470</td>
<td>--</td>
<td>125</td>
<td>--</td>
<td>--</td>
<td>157</td>
<td>66</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>395</td>
<td>87</td>
<td>95</td>
<td>--</td>
<td>96</td>
<td>66</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Rolpa</td>
<td>325</td>
<td>--</td>
<td>80</td>
<td>45</td>
<td>66</td>
<td>84</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Rukum</td>
<td>300</td>
<td>30</td>
<td>75</td>
<td>--</td>
<td>60</td>
<td>--</td>
<td>75</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Salyan</td>
<td>225</td>
<td>--</td>
<td>95</td>
<td>7</td>
<td>--</td>
<td>66</td>
<td>--</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>1,715</td>
<td>117</td>
<td>470</td>
<td>52</td>
<td>222</td>
<td>373</td>
<td>141</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Key:**
- H'ry = Hosiery (Knitting)
- C.Tex = Cotton Textiles
- B.Sth = Blacksmith
- D.Wve = Weaving
- Sew = Sewing
- Cpt = Carpets
- G.Prc = Ginger Processing
- Stov = Improves Stoves
- Pot = Pottery

### Table 17-3: Registered Cottage Industry Activities and Those Still Functioning in 1985, Salyan District

<table>
<thead>
<tr>
<th>Component</th>
<th>No. Registered</th>
<th>Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textile</td>
<td>31</td>
<td>11</td>
</tr>
<tr>
<td>Hosiery</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Furniture</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Ag. Tool</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Cutlery</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Service</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Woolen Carpet</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Loaf</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Shoe</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Churi Ghee</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Murali</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Curie</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Soap</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Rice and Floor Mill</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Smokeless Stove</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>102</strong></td>
<td><strong>64</strong></td>
</tr>
</tbody>
</table>

Source: Cottage Industry Branch, Salyan.
<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Raw Material</th>
<th>Tool Equipment</th>
<th>Raw Goods</th>
<th>Total Sales</th>
<th>Adm. Exp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981/82 (2038/39)</td>
<td>394</td>
<td>220</td>
<td>58</td>
<td>620</td>
<td>260</td>
</tr>
<tr>
<td>1982/83 (2039/40)</td>
<td>822</td>
<td>212</td>
<td>33</td>
<td>1,068</td>
<td>338</td>
</tr>
<tr>
<td>1983/84 (2040/41)</td>
<td>107</td>
<td>503</td>
<td>49</td>
<td>660</td>
<td>715</td>
</tr>
<tr>
<td>1984/85 (2041/42)</td>
<td>1,039</td>
<td>148</td>
<td>65</td>
<td>1,252</td>
<td>425</td>
</tr>
<tr>
<td>Total</td>
<td>2,362</td>
<td>1,083</td>
<td>205</td>
<td>3,600</td>
<td>1,738</td>
</tr>
</tbody>
</table>

Metal work;
Furniture;
Ceramics;
Bamboo;
Woolen carpet;
Sweets; and
Soap.

They are sharing infrastructure and marketing facilities and receiving training from a CIDB center in the village. They also are obtaining their raw materials and some marketing help from the Emporium. The group built one community house and uses it to gather for discussion of their problems and for finding solutions to them. They started only one year ago, but their effort is quite impressive for such a short time.

The Agricultural Development Bank, through SFDP and its regular program, also finances small-scale industries in the Project area.

G. Problems and Constraints Encountered

There was little effective cooperation between the CIDB and the Emporium. As a result, people were trained but did not receive effective support to help them begin production or market their products.

The improved road transport in the Project area improved India's access to markets in the Dang and Hill areas. Local artisans often found they could not compete in price with Indian cloth.

The program, unfortunately, never provided loans for equipment or for working capital. The CIDB never asked the Emporium to link up with one of the commercial banks or with the ADB/N to mobilize credit for its "clients," nor did it attempt to make this link itself.

Most of the training was carried out in or near the District headquarters. Only about 20 percent of those trained were from outside the headquarters, where they received training from mobile trainers.

The training program was not based upon market requirements. Most received training in cotton textiles, for example, an area that offers little scope of profitable production based upon the training given because of competition and lack of an ample market.
H. Findings and Conclusions

The project design envisaged inputs of approximately US$ 600,000 in a well-coordinated effort by the CIDB and the Cottage Industries Emporium. Total inputs were considerably less (Rs 4.4 million or about US$ 300,000). The training of 1,715 persons exceeded the Project target of 900 persons. However, much of the training did not result in cottage industry development. This is particularly the case with regard to training in sewing (372 persons trained) and in cotton textile production (470 trained).

It appears that training in traditional skills or training related to traditional products was more successful than training in nontraditional skills or products.

The lack of effective coordination among the CIDB, the Cottage Industry Emporium and credit institutions resulted in less-than-effective support of the program. Trainees lacked programmed access to technical assistance and credit in getting into business and in marketing their products. There was no consistent follow-up with production and marketing after training.

The Evaluation Team observed a number of cottage industries operating as a result of the Project. However, available data are insufficient to establish what proportion of those trained successfully entered business. Emporium data indicate, however, a definite increase in sales of handicrafts.

There is a continuing need to help people in the Rapti Zone find viable off-farm employment. Efforts to develop cottage and small industries in the area should be continued. However, these efforts can be effectively conducted through national-level programs.

I. Recommendations

- HMG and USAID should strongly support World Bank approval of an extension of its Cottage and Small Industry Project to encompass at least Dang, Rolpa, Salyan and Pyuthan Districts; and

- No further support should be programmed through the Project for CIDB/Emporium activities.
ANNEX 18

Service Centers
ANNEX 18

Service Centers

A. Summary

Sub-district centers to provide isolated rural communities with improved access to goods and services for local development are a key element in HMG's decentralization and rural development effort. In principle, HMG is planning to develop one such center per Ilaka, or up to nine per District. Under the Project, 26 centers for agricultural and livestock services were established, using rented buildings. Five service center complexes are under construction. Properly sited, staffed and managed, sub-District service centers are an appropriate and effective mechanism for support of local/rural development efforts in the Rapti Zone. However, all five Districts require continued support to plan, develop and utilize their centers effectively. Support should be provided to the Districts in the second phase of the Rapti Zone development effort, bearing in mind that the emphasis should be effective delivery systems.

B. Purpose

The purpose of the service center component was to provide improved access to goods and services--including, agriculture, livestock, health, credit and agricultural inputs resource management--to rural communities of the Rapti Zone.

The service centers were seen as part of the project purpose, "to improve local demand for, and control of [these] national delivery systems."

C. Background

The Rapti IRD Feasibility Study put major emphasis on local institutional development to strengthen village and district-level capabilities in the project area. The feasibility study called for such institutional development to direct local level resources towards project participants for more effective planning, design, and implementation of various activities.

The PP proposed the upgrading of district level line ministry offices and the creation of five additional service centers in each hill district and two in Dang to provide improved access to goods or services. The decision to develop rural service centers reflected the difficulty of providing services from District headquarters to 230 Village Panchayats and almost 2,000 wards, many several days travel

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1PP, Annex 3 p.2.
away. The PP also called for "the formation of service center committees [and] local participation in the planning and evaluation of the services provided by the centers."²

The 1983 Special Evaluation recommended review of the location, use and investment in the service centers to ensure their positive contribution to local development. Furthermore, the evaluation noted service centers as one of the more creative programs in the Rapti Project in supporting the service delivery to isolated hill farmers. Two suggestions were made with regard to possible improvements of the services center program:

- First, the current plan calls for overly elaborate structures to house the different offices and technical experts. The scale of these buildings should be reduced and local materials should be used to keep expenditures down and allow for replicability; and

- Second, the centers should be used to promote marketing and off-farm employment. Periodic markets could be established as well as small processing plants and grinding mills. The carefully considered location of these centers is extremely important if they are in fact to be used by the local people.³

The Decentralization Act of 1982, as implemented, defined the functions and duties of the Service Center—established as the lowest organ of His Majesty's Government responsible for providing assistance to Village Panchayats in matters relating the local development—as follows:

- To provide necessary services in the formulation, implementation and review of plans for the development of village panchayats;

- To help in the establishment and smooth operation of consumers committees in village panchayat areas;

- To make available such technical services as may be necessary to enable village panchayats to operate their development programs;

- To help ensure the availability of necessary financial and material resources for village panchayats;

²PP, p.13.
³MTE, p.36
D. Description of Activities and Program Carried Out

1. Organization and management

The program of the service center (sub-center) was managed by the concerned line agencies. However, the coordinating efforts envisaged at the sub-center level were not realized.

2. Inputs

The Project covered the costs of establishing and operating 26 sub-centers staffed with agricultural and livestock extension staff. USAID financed 70 percent of the costs (Rs 5.8 million or US$ 0.39 million as an exchange rate of Rs 15 = US$ 1) and HMG financed 30 percent.

The Project also provided for the construction of five service center complexes (See Annex 15).

3. Outputs

Twenty-six sub-service centers were operated, providing agricultural and livestock services to surrounding communities.

4. Related activities by other agencies and donors

In strengthening the service centers at the Ilaka level no other donors or agencies are involved. However, in hospitals and health posts, the Netherland Government has undertaken a construction program for hospitals and health posts (See Annex 15).

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E. Problems and Constraints

To make available material and technical cooperation for the development work of Village Panchayats within each District Panchayat, HMG/N divided Districts into nine Ilakas. In each Ilaka, one service center was to be established, generally in the center of such areas. The service center was to provide improved access to goods and services; the Ilaka is a political unit. Unless the service center is viewed as a service-delivery mechanism and located where people usually go to buy and sell goods, the objective will not be fulfilled. Selection of service center sites thus should not be politicized.

F. Findings

The establishment of service centers has extended institutional capacity somewhat towards the villages from the district level. Project support was provided to 26 sub-District service centers for agricultural and livestock and, in some locations, forestry and credit extension services. One service center in each District (Chilahi at Dang, Jhenam at Rolpa, Dhanbang at Salyan, Churjhari at Rukum, and Tiram at Pyuthan) is under construction.

G. Conclusions

The sub-service centers place agricultural and livestock extension personnel at the sub-District level, better positioned to support local community efforts to improve agriculture and animal husbandry.

H. Recommendations

- Continued support should be provided for existing service centers and a plan for staffing and operating each drawn up. Expenditures on buildings should be scaled down through the use of local materials and appropriate designs. The construction of the five service center complexes should be completed;

- In designing a new Project for a second phase Rapti Zone Development Effort, the role of service centers should be carefully reviewed and planned with emphasis on delivery of effective support services for agricultural and livestock production, forestry/natural resource management, and local development projects (including village level planning and implementation). Each Service Center should have an implementation committee to which assistance should be provided in planning, programming, implementing, monitoring and evaluation of programs.

- Planning for service centers should take into account their use as market centers (e.g., as sites for periodic markets) and the need for improved trails linking villages and hamlets to them. However, improvements are needed for the
organization, planning and support of their field personnel. Adequate provision was not made for timely agricultural credit and the supply of agricultural and livestock inputs (See Annexes 4, 5, 8, and 9). Forestry and Soil Conservation services were not to be provided in effective conjunction with agricultural and livestock services. Service Centers should be used to promote marketing and off-farm employment, as was suggested in the 1983 Special Evaluation.
ANNEX 19

Education

A. Summary

There has been a rapid growth of schools, teachers and school enrollment. The project contributed to school improvement, teacher training and village education for training in literacy, sanitation, nutrition, agriculture and home science. Implementation of the program halted due to serious financial problems (which needs HMG/USAID careful study). As future activities should concentrate on local development, food and agricultural production and forestry and natural resources management, it is recommended that an education component not be included in on-going activities. It is assumed that the Government will continue to develop educational facilities in the area and that District and Village Panchayats will continue to support local school improvement and development under local development projects.

B. Purpose

The purpose of the education component was to improve primary and secondary school buildings; to upgrade teachers through training; and to support functional literacy and other adult education programs.

The PP included this activity under the program component for employment and skills development, noting that

Although mixed farming will probably continue to provide primary employment for most people in the Zone for many years to come, alternative employment for those with little or no access to land and enhancement of basic skills for younger people in particular are important if development in Rapti is to become self-sustaining.¹

The project purpose set forth in the log frame of the PP is defined to be increasing the quality of life and improving local demand for and control of national level delivery systems for education, improved agriculture, health, resource planning and population planning.

¹PP, p._
C. Background

The Feasibility Study (FS) recommended an eleven-point program including those activities retained in the PP and Project Agreement (ProAg). It defined the main aims of the education component as being to increase overall literacy and to motivate and mobilize people for development.

The Project Paper specified that USAID would provide US$ 1.4 million through District Education Officers over five years to help: a) up-grade schools (18 percent of primary schools, 37 percent of lower secondary and 100 percent of secondary); b) train all local teachers through workshops; and c) provide 8000 annual scholarships or stipends for girls, orphans and students from broken homes.

The Project Agreement specified that a total of US$ 1.39 million (US$ 1.107 million from AID and US$ 0.292 million from HMG/N) would: support in-service training of all teachers in Rapti Zone; establish approximately 500 functional literacy/adult education courses; provide scholarships and stipends to needy students; and up-grade school facilities. Under this agreement, the HMG/N contribution was to include matching funds from communities involved in the school up-grading programs.

The Mid-Term Evaluation carried out in April 1983 recommended continuation of adult education programs with additional emphasis on the functional literacy portion of the training sessions. The evaluation team also suggested that other arrangements should be made for school roofing and building improvements, including incorporating them in the grants-in-aid program as an essential part of the Districts' responsibilities.

D. Description of Activities and Program Carried Out

1. Organization and Management

In the first four years, the program was managed by the Ministry of Education through District Education Officers (DEO) and local school committees in accordance with annual workplans and budgets worked out by the Ministry in coordination with MPLD and USAID.

2. Inputs

Total expenditures out of budget releases are expected to amount to about Rs 5 million when all accounts are cleared. The dollar equivalent of this Rs 5 million is approximately US $0.4 million (based on the exchange rate of US$ 1.00 = Rs 12 in 1982). Thus expenditures amount to about 30 percent of the amount planned, when all accounts are cleared. Expenditure data are shown in Table 19-1.
Table 19-1: Education Expenditures and Budget Data (Rs '000')

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Total Budget</th>
<th>Total Budget Releases</th>
<th>Total Expenditures</th>
<th>USAID Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980/81 (2037/38)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1981/82 (2038/39)</td>
<td>2,000.0</td>
<td>1,128.0</td>
<td>576.6</td>
<td>576.6</td>
</tr>
<tr>
<td>1982/83 (2039/40)</td>
<td>3,265.0</td>
<td>2,655.3</td>
<td>2,035.6</td>
<td>2,035.6</td>
</tr>
<tr>
<td>1983/84 (2040/41)</td>
<td>3,060.0</td>
<td>624.6</td>
<td>584.6</td>
<td>497.4</td>
</tr>
<tr>
<td>1984/85 (2041/42)</td>
<td>3,428.0</td>
<td>1,934.0</td>
<td>4.3a</td>
<td>3.7</td>
</tr>
<tr>
<td>1985/86 (2042/43)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Expenditures</strong>b</td>
<td><strong>6,341.9</strong></td>
<td><strong>3,201.1a</strong></td>
<td><strong>3,113.3</strong></td>
<td></td>
</tr>
</tbody>
</table>

---

__a__Expenditures are not on an accrued basis and expenditures recorded for 1983/84 and 1984/85 are incomplete.

__b__Education expenditures by District were as follows (total expenditures reported through August 1985):

- Kathmandu (overhead) 10.8 percent
- Dang 19.1 percent
- Pyuthan 22.0 percent
- Rolpa 13.0 percent
- Rukum 18.4 percent
- Salyan 18.9 percent

100.0 percent

3. Outputs

a. School Improvement

A total of 125 schools were improved with roofing, plastered walls, and some furnishing. Table 19-2 shows the school improvement by year and by District. Table 19-3 shows type of school improved--primary, lower secondary and secondary by District.

b. Teacher Training

Two programs of teacher training were carried out. Under the institutional/campus teacher training program, long-range in-country training in general educational fields was planned for 240 teachers. A total of 96 teachers were so trained. The second program envisaged short-term local workshops in science, math and English for 2600 teachers. A lack of subject matter specialists to conduct the workshops is said to have limited implementation with the result that only 200 teachers were trained.

c. Stipends for Needy Students

A total of 941 annual stipends for needy students were provided under the project, beginning in the second year of the program with a few provided in 1983-84 (see Table 19-4).

d. Adult Education and Functional Literacy Courses

Four-month adult literacy courses emphasizing math and Nepali, and functional literacy courses of six months emphasizing health, nutrition, education, agriculture, home science and cottage industry were organized at the village level beginning the second year of the project and phased out in 1984-85 due to financial problems. Adult education training was included in the Small Farmer Development Program, as well as the program in Production Credits for Rural Women and the recently instituted Household Production Systems.

e. Other

The "literacy" and "functional literacy" courses stemming from a national program developed by the Ministry of Education in 1977-78 proved very popular with villagers and 841 courses were conducted in the first three years of the project, exceeding the original level planned of 500. (See Tables 19-5 and 19-6.) In certain Districts, scout training, teacher training in sports and extra-curricular activities, and the distribution of sports and educational materials were met with "considerable success".
Table 19-2: School Improvement Program by Year

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>5</td>
<td>19</td>
<td>-</td>
<td>5</td>
<td>29</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>5</td>
<td>14</td>
<td>-</td>
<td>-</td>
<td>19</td>
</tr>
<tr>
<td>Rolpa</td>
<td>5</td>
<td>32&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
<td>37</td>
</tr>
<tr>
<td>Rukum</td>
<td>5</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>18</td>
</tr>
<tr>
<td>Salyan</td>
<td>5</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>95</td>
<td>-</td>
<td>5</td>
<td>125</td>
</tr>
</tbody>
</table>

<sup>a</sup>27 primary schools, four lower secondary and one secondary.

Table 19-3: Breakdown of School Improvement by Category

<table>
<thead>
<tr>
<th>District</th>
<th>Primary Schools (Grades 1-5)</th>
<th>Lower Secondary (Grades 1-7)</th>
<th>Secondary (Grades 1-10)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dang</td>
<td>24</td>
<td>2</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>Rolpa</td>
<td>32</td>
<td>4</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td>Rukum</td>
<td>10</td>
<td>3</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Salyan</td>
<td>13</td>
<td>6</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>20</td>
<td>19</td>
<td>125</td>
</tr>
</tbody>
</table>

Table 19-4: Student Stipend Program
(Numbers)

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Dang</td>
<td>-</td>
<td>300</td>
<td>-</td>
<td>-</td>
<td>300</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>-</td>
<td>162</td>
<td>10</td>
<td>-</td>
<td>172</td>
</tr>
<tr>
<td>Rolpa</td>
<td>-</td>
<td>140</td>
<td>-</td>
<td>-</td>
<td>140</td>
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<tr>
<td>Rukum</td>
<td>-</td>
<td>128</td>
<td>-</td>
<td>-</td>
<td>128</td>
</tr>
<tr>
<td>Salyan</td>
<td>-</td>
<td>201</td>
<td>-</td>
<td>-</td>
<td>201</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>931</td>
<td>10</td>
<td>-</td>
<td>941</td>
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### Table 19-5: Functional Literacy Courses Carried Out in Rapti Zone

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<tr>
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<tr>
<td>Dang</td>
<td>11</td>
<td>13</td>
<td>30</td>
<td>19</td>
<td>-</td>
<td>83</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>11</td>
<td>13</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>54</td>
</tr>
<tr>
<td>Rolpa</td>
<td>11</td>
<td>11</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>52</td>
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<tr>
<td>Rukum</td>
<td>11</td>
<td>13</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>54</td>
</tr>
<tr>
<td>Salyan</td>
<td>11</td>
<td>13</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>54</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>61</td>
<td>150</td>
<td>19</td>
<td>-</td>
<td>285</td>
</tr>
</tbody>
</table>

### Table 19-6: Functional Literacy Courses Carried Out In Rapti Zone

<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Dang</td>
<td>25</td>
<td>37</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>112</td>
</tr>
<tr>
<td>Pyuthan</td>
<td>25</td>
<td>37</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>112</td>
</tr>
<tr>
<td>Rolpa</td>
<td>25</td>
<td>37</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>112</td>
</tr>
<tr>
<td>Rukum</td>
<td>25</td>
<td>35</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>110</td>
</tr>
<tr>
<td>Salyan</td>
<td>25</td>
<td>35</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>110</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>125</strong></td>
<td><strong>181</strong></td>
<td><strong>250</strong></td>
<td>-</td>
<td>-</td>
<td><strong>556</strong></td>
</tr>
</tbody>
</table>

E. Related Activities by Other Agencies, Donors and USAID

The Ministry of Education, working with district and local education committees, has substantially increased primary and secondary school facilities in each of the five Districts.

The World Bank is carrying out a comprehensive primary education improvement program in Dang District which began in 1984-85.

The Peace Corps is providing English language teachers for schools in several Districts of the Zone.

The British Volunteer Service provides advisors to help operate school hostels for girls as well as to teach English.

The HMG/N USAID-supported Women's Skills Development Project is carrying out a program to increase female access to education in Pyuthan District.

The HMG/USAID Radio Education Teacher Training Project has contributed to teacher training but did not achieve the objective in the PP (Annex C) of training all teachers in Rapti Zone by 1984.

Some school improvement was carried out under the HMG/N grant-in-aid for local development.

F. Problems and constraints

Financial management problems impeded and in 1985-86 arrested the program. On the one hand, District and local school committees experienced great difficulty and serious delays in keeping and submitting their financial accounts and verifying expenditures properly. The financial controller in Pyuthan reported that proper and timely accounting was a widespread problem affecting all Departments and required training for District accountants and bookkeepers and more attention by Departments to financial management.

On the other hand, it was reported to the Evaluation Team by many source in the Zone that central government financial authorities were consistently slow in releasing funds required for District programs. Under HMG financial procedures, the Ministry of Finance is supposed to make releases of funds to Districts at the beginning of every four month period (trimesterly). The Government's Financial Controller informed the Team that the principal reason for delays in funding flows is "uncleared accounts" and the refusal of the Government to make a trimesterl release until all accounts for the previous year have been "cleared." However, the Districts report that whether or not a Department's accounts have been cleared, it rarely happens that program funding is provided before December or January, some six months after the start of the fiscal year with the result that Districts have only five to six months to implement their annual workplans. The financial management problems affecting educational activities resulted in a
sharp decrease in the program starting in 1983-84 and its suspension in 1985. USAID's concern to concentrate activities was also a factor in the decision taken to stop funding the program in 1985.

It appears that slowness in transferring budget authorizations to Districts impeded program implementation in other departments (e.g., forestry) and was a factor in the extremely slow start up of the project overall.

USAID financial management also needs to be concerned with its interface with program implementation. At the time of writing the USAID controller had effectively stopped all implementation on the 1985-86 mission programs in order to resolve a minor issue involving a few thousand dollars annually for customary HMG/N funding of tea breaks.

G. Measurement of Progress

1. Input Levels

Inputs in education are estimated at about 30 percent of the US$ 1.1 million of AID funding programmed in the PP and ProAg.

2. School Improvement

The Project Paper specified that 18 percent of the primary schools, 29 percent of the lower secondary schools and 100 percent of the secondary schools will receive funding for up-grading facilities during the course of the project. A total of 125 schools did receive funding and roofing materials, including 106 primary and lower secondary and 19 secondary schools.

Comparing the number of schools is rendered difficult by a change in definition. In 1980, a primary school consisted of grades 1-3, lower secondary school of grades 4-7 and a secondary school of grades 8-10. In 1985, primary school includes the first five grades, lower secondary includes grades 6-7, and secondary grades 8-10. Moreover, the term a lower secondary school improvement may encompass the primary classes in the same building.

At the beginning of the project, there were 578 primary schools, 144 lower secondary and 28 secondary schools. The number of primary and lower secondary schools was therefore 722. Of these, 106 schools or 14.9 percent, were improved under the program, somewhat below the target. However, as many secondary schools were improved as there were such schools at the beginning of the project so in this instance the target was exceeded.
3. **Teacher training**

The PP specified that 2600 teachers in Rapti Zone would be provided local training through a series of workshops, and that 240 teachers would be provided long-term, in-country training to obtain a level A teaching certificate or a certificate of 2 years of campus training. Under the project, 200 teachers participated in local training workshops or 13 percent the number targeted. The project provided long-term in-country training for 46 teachers or about 19 percent of the number targeted.

4. **Student stipends**

The PP targeted 8000 annual stipends. A total of 941 or about 12 percent of the target were provided.

5. **Adult education and functional literacy**

The PP targeted 500 courses. The number of courses held totalled 841, or nearly 170 percent of the target.

H. **Findings**

The project had a considerable impact on improving primary and secondary education and promoting adult education, particularly in the third and fourth years of the project when the bulk of expenditure and completions actually took place. The program also served to help villages and local school committees plan and manage local development. The program generated a substantial volume of local resources generation (labor, management) from the school improvement program.

1. **The school improvement program**

It is apparent from observation and discussions with community leaders, teachers, and students that an improved school in a village is a source of community pride and regarded as a visible sign of accomplishment and development. The improvements are simple; a roof that does not leak, walls that are repaired and smoothed over, a cleaner environment for school work, and simple furnishing (desks, benches, book cases). By providing a better work place for teachers and students, the program significantly contributes to the very large effort of the districts, villages and central government to provide educational opportunities for all.

2. **Teacher training**

Inputs were one-tenth to one-fifth of those planned and too small to significantly improve the numbers of trained teachers or the quality of teaching in general in the primary and secondary grades.
Over the past five years, 1980-81, the number of schools and the number of teachers increased a great deal as a result of a continuing effort to expand education by the Ministry of Education and District and local school boards. According to national data, the number of teachers in the Rapti Zone increased from 1,299 in 1975-76 to 1,957 in 1980-81 to 2,591 in 1984/85. In this process, the number of trained teachers has increased only slightly, (about 5 percent in Dang District and 30 percent in Pyuthan Districts, for example). The result is that the ratio of trained to total teachers has declined drastically (from 39 percent in 1980 to 76 percent in 1985 in Dang; from 23 percent in 1981-82 to 31 percent in 1984-85 in Pyuthan) and the effort to improve the quality of teaching has not kept pace with the expansion of schooling.

3. Adult education and functional literacy

Adult education (AE) and functional literacy courses were conducted mainly in 1981-82 and 1982-83 with a few in 1983-84. However, the team was able to refer to an evaluation of the program carried out in 1983 by the Language Culture Training and Research Center in Kathmandu under contract with USAID.

This evaluation found that 80 percent of the planned AE centers were established in 1981-82 and in 1982-83; that about 60 percent of the targeted number of adults achieved literacy; and that an additional 20 percent achieved near literacy. It also showed that adult participants in the functional literacy program in general achieved higher mean scores in reading, writing and arithmetic than those participating in the regular literacy program.

The cessation of the program in 1984 was partially offset by continuing functional literacy programs in more specialized programs (SFDP, PCRW, etc.).

I. Conclusions

o Considering the role that education plays in manpower development as well as in stimulating popular participation in local development, it is both logical and desirable to encourage necessary levels of education activities in the Rapti Zone;

o The education component suffered from failure to resolve the financial management problems encountered;

o Except for problems of financial management, the primary/secondary school improved program was carried out effectively by local school committees with the assistance of District Education Officers and the Project Coordinator’s Office. The usefulness and impact of improved schools in the villages of Rapti Zone is evident and continuing
Implementation of the school improvement project which had been handled by District Education Offices would be better managed by the District Technical Office which has the necessary technical expertise;

In some instances, the project refused to procure local materials for roofing in preference to importing tin roofing which had to be transported at considerable expense to the Hill areas. It would be more appropriate to procure local building materials where available and suitable;

The effort to improve teacher competence through local workshops and long-term training fell far short of targets. In the face of the expansion in the number of teachers in the Rapti Zone in the past five years, the proportion of trained teachers to total teachers worsened considerably;

The program of providing stipends to needy (and at the same time capable) students served a desirable equity objective, but fell far short of the project target;

Support for adult educational literacy, teacher training and stipends can be channelled effectively through district local development programs; and

More adult education/literacy courses were carried out than originally planned. Positive results were achieved, although a 1983 evaluation concluded that improvements in the organization and implementation of the program ought to be made. As the 1983 AE evaluation stated:

In view of the fact that the major needs of the rural communities in Nepal consist in increasing agricultural production, improving the sanitary conditions of the locality, reforming old fashioned traditions, and above all, improving the living standard of the rural population, the adult education programs have many crucial roles to play. First and foremost, creating a sense of awareness and self confidence among the rural population to the fact that they could improve their condition is of prime importance. Secondly, providing them with one or more productive skills is also equally important; lastly but not the least important, motivating and enabling them to participate in rural development activities is also necessary in that in particular the realization of the development goals of the country.2

The education suffered from failure to resolve the financial management problems encountered.

2LCRC, "Adult Education Program in Rapti Zone...," October 1983.
J. Recommendations

- As future activities under the recommended new Project should concentrate on local development programs, food and agricultural production and forestry and natural resources management, the education component should not be included in on-going activities; and

- The serious financial management problems which plagued and eventually arrested the education program have slowed overall Rapti Zone Project implementation. HMG and USAID should study ways to improve the flow of funds to Districts for program implementation and district accounting.
ANNEX 20

Health and Family Planning
ANNEX 20

Health and Family Planning

A. Summary

The Project Agreement provided for support for the construction and equipment of District Health Centers in Salyan and Pyuthan and noted that the HMG/USAID Integrated Rural Health/Family Planning Services (IRH/FP) Project would provide primary support for family planning programs in the Zone. The IRH/FP project has funded the construction of the two District health centers in Salyan and Pyuthan and has supported development of family planning services in all five districts of the Zone. The IRH/FP project should provide continued support for the rural health and family planning program and initiate measures to provide for malaria control and prevention. As a matter of priority, village-planned measures to improve local health, nutrition and sanitation should be supported by District health services, by the local development fund proposed for the second phase development of the Zone, and by continued training for local leaders and for village functional literacy.

B. Purpose

The purpose of the Health/Family Planning Component was to improve village health conditions and to promote family planning.

C. Background

The Feasibility study carried out in 1978 and 1979 proposed a seven point health program including:

- Upgrading physical facilities;
- Training in nutrition;
- A pharmacy program;
- Mobile health camps;
- Development of health care facilities;
- Family planning; and
- Maternal-child health care.

The project paper (PP) proposed to improve village health conditions and to control rapid population growth. Unfortunately, the PP did not clearly explain how these desirable objectives were to be achieved. It was however clear that great reliance was to be placed on national level support to be provided by the HMG/USAID TRH/FP Project.
However, the PP also indicated that the Project would support local-level activities, including functional training courses in health and sanitation for local leaders and organizations, village workers and small farmer groups.

The PP also noted that longer-term measures would focus on increasing employment opportunities for, and literacy, education and civic participation of women throughout the Zone—presumably under the Skills and Employment component of the project.

The Project Agreement provided support for the construction and equipment of District Health Centers in Salyan and Pyuthan, and noted that primary support for family planning program in the Zone would come from the IRH/FP project.

The 1983 Special Evaluation recommended that health and family planning services be intensified through other USAID projects and noted that improved sanitation is a priority. It also suggested that a non-governmental organization might work with the District Panchayats on this program. It also suggested more reliance on private community and traditional medical services.

D. Description of Activities and Program

No funds were programmed specifically for health and family planning under the Project. The IRH/FP project provided for the construction of two 15-bed District Health Centers in Salyan and Pyuthan. Construction of these facilities is expected to be completed early in 1986. (In addition, Dutch assistance is being provided to construct District hospitals in Rukum and Rolpa.) The MCH/FP project also:

- Supported about 129 PBHWs in Rapti Zone who motivate for sterilization, provide pills and condoms and deliver basic MCH services;
- Provided malathion for malaria spraying in Dang and Salyan;
- Provided contraceptives through health workers and retail outlets;
- Constructed and established a regional warehouse in Nepalganj and developed a unified logistics and supply system for procurement, storage and distribution of basic medicines, vaccines and supplies; and
- Supported a two-year goiter prevention campaign (1984-86) to cover 724,000 persons in Rapti Zone; and
Supported a child survival/EIP program in Dang (1985-86) to immunize 80 percent of women of reproductive age against tetanus, 80 percent of children nine to 36 months of age against measles, and 80 percent of children under one year of age with BCG.

Under the Education sub-component of the project, several hundred functional literacy courses were held at village level, including health and sanitation education (see Annex 19). Functional literacy and health and sanitation education is also provided through the Small Farmer Development Program and the program for Production Credit for Rural Women (see Annexes 8 and 11).

Under the Rural Works program, drinking water systems were designed and installed in a number of villages. However, this program did not include development of latrines.

In visiting the five Districts, the Evaluation Team observed:

- Vacant Posts—many authorized district health center positions were vacant;
- Insufficient medicines — in most health posts;
- Widespread malnutrition, especially for the young;
- A significant increase in health and family planning facilities in the Zone since 1980;
- A lack of maternal child health care facilities; and
- Weak and ineffective family planning programs.

E. Problems and Constraints

Discussions with the USAID staff of the IRH/FP project suggest that a major constraint in promotion of health and family planning programs in Rapti Zone is the difficulty in recruiting qualified personnel willing to serve in the Zone, particularly in the Hill Districts. The USAID health staff also pointed to the potential of a serious malaria outbreak in Dang due to a lack of preventive measures.

F. Conclusions

There has been a significant increase in health and family planning facilities in the Zone. With guidance from the District level, there is considerable scope for village-level initiatives to improve village health, sanitation and nutrition.
G. Recommendations

The local development program should provide funds to support village-level initiatives in health and family planning, including functional literacy training, sanitation, drinking water systems and nutrition. With respect to the latter, pulse crops to complement cereal protein and household horticulture should be emphasized, as noted in Annexes 4 and 25.
ANNEX 21

Project Coordinator's Office
ANNEX 21

Project Coordinator's Office

A. Summary

The Project Coordinator's Office (PCO) was established in 1980 under the Design Project to coordinate, guide and support District and Village Panchayats as well as line agencies in planning and implementation of Project. The PCO's responsibilities covered planning and monitoring, financial reporting and accounting, procurement and logistics, technical support (including engineering) and training.

PCO has retained, on an interim basis, functions for design approval of local development projects (rural works) pending strengthening of District Technical Officers, for which measures have been and are being taken. A deadline of the end of 1986 should be set for their transfer, which was recommended in April 1983.

Related management issues are treated in Annex 24.

B. Purpose

The purpose of the PCO is to coordinate, guide and support District and Village Panchayats, as well as line agencies in planning and implementing the Rapti Zone Rural Area Development Project.

C. Background

Following HMG's policy on rural development, the Project Paper (PP) recognized the need for a strong coordinating and facilitating role in integrated projects. Accordingly, the Project design provided for a Project Coordinator's Office to be located in Dang, with a small liaison office located in the Ministry of Panchayat and Local Development (MPLD). As set forth in the PP, the PCO was to carry out the following functions:

- Facilitate the provision of financial resources, manpower and commodities needed to carry out the Rapti Project;
- Assist the Districts under the projects in plan formulation implementation, monitoring and evaluation;
- Assist in the mobilization of resources for projects;
- Monitor and review the progress of programs;
- Disseminate information about the Project; and
- Test and disseminate technologies in the field.
The PCO came into existence in January 1980, funded by the Design Project. Subsequently, in August 1980, the Project Agreement (PA) provided funding by USAID of approximately US$ 2 million, through the MPLD predecessor and other ministries as appropriate, to establish, staff and operate the PCO. It was understood that the PCO's functions were to include backstopping and coordinating both local and central level development efforts described in the agreement during the five year project.

The Special 1983 Mid-Term Evaluation (MTE) carried out in April 1983, however, recommended a phase-out of the PCO. The MTE argued that institutional development should be focused on the District Panchayats and particularly on the role of the Local Development Officer (LDO) without creating another layer of administration. The MTE stressed the importance of maintaining the focus of rural development planning and implementation in the District and Village Panchayats in accordance with the 1982 Decentralization Act, noting that:

- The District Panchayat is and must be the first level of aggregate planning and coordination where resources and village plans are balanced; and
- The District and Village Panchayats should have as much independent technical and administrative capability as possible to plan and carry out local development responsive to the villagers interest.¹

In response to the MTE, the PCO was reorganized effective May 1984. Its functions were redefined more sharply and its authorized staff was reduced from 164 persons in 1983 to 75. Annex 21-1 reproduces the new organization chart of PCO. The reduction in PCO authorized staff corresponded to increases authorized by the MPLD in District staffing. In addition, agreement was reached in May 1984 with LDOs to transfer responsibility for approval of rural works projects from the PCO to District Technical Offices (DTO) as soon as DTO capability was sufficiently increased under a program to be carried out by PCOs and the Districts.

D. Description of Activities and Program Carried Out

1. Organization and Management

The organization of the PCO during the past two years has been as shown in Annex 21-1. The office is headed by a gazetted Class I officer seconded from the MPLD. A small liaison office is maintained at MPLD in Kathmandu. The annual work plan and budget of PCO is subject to agreement by USAID and MPLD with the usual Ministerial clearances. The PCO operates not only under the authority

¹MTE, pp. 6, 37, 38.
of the MPLD, but also directly under the high-level National IRD Board on which all line agencies are represented. It is the IRD Board which provides the PCO its coordinating role and authority.

2. Inputs

The Project has covered the costs of constructing an office complex for the PCO in Tulsipur which was completed in February 1985 at a cost of Rs 9.7 million.

It has also financed all administrative and operating costs of the PCO (budget items 1 through 7 in HMG public accounting) amounting to Rs 9.4 million in the first five years of the project. Expenditures for program costs (budget items 8 through 10) which include office furnishings, tools and equipment and training in the PCO budget amounted to Rs 2.1 million through the fiscal year ending July 1985.

The Project also funded other PCO construction costs (budget items 11 and 12) which include construction contract costs and costs of building materials. PCO implemented the construction of District training centers, godowns and DTO offices and also procured building materials for District small rural works programs. (See Annexes 14 and 15.)

Total construction expenditures through July 1985 amounted to Rs 19.8 million of which Rs 5.3 million was for construction contracts and Rs 14.5 million for construction materials.

During the first five years of Project activity, expenditures under the PCO account totaled Rs 41.2 million. Deducting the construction costs which were in direct support of the Districts, total expenditures through 1984-85 for PCO amounted to Rs 21.4 million. Assuming an average exchange rate over the life of the project of Rs 15 equals US$ 1, the total USAID cost was US$ 1.4 million.

Virtually all costs of operation for the PCO, including the PCO office complex, program costs and construction costs were borne by USAID, as planned under the Project Agreement.

3. Outputs

a. Overall Coordination, Planning & Support

Outputs include the overall coordination and support provided by PCO for District and line agency programs. This has included, in particular, the preparation of the annual work plans and budgets for the project—in consultation with the five Districts, line agencies and USAID, and the preparation of quarterly and annual progress reports. The PCO has also been responsible for maintaining accounts of budget approvals and releases and of project expenditures.
It has also provided financial management and accounting assistance to all implementing agencies and instructions in revised reporting of reimbursement procedures. The following units are operational:

- The Office of the Coordinator;
- The Administrative and Procurement Unit (APU);
- The Financial Management Unit (FMU);
- The Planning and Monitoring Unit (PMU);
- The Training and Communication Unit (TCU);
- The Technical Support Unit (TSU); and
- The Kathmandu Support Unit (KSU).

b. Planning and Monitoring

The Planning and Monitoring Unit comprises one Chief Planning Officer, one Monitoring Officer, one Evaluation Officer, three assistants and clerical staff and an expatriate advisor.

The Unit has assisted the Districts in preparing their annual programs, workplans and budgets and in preparing their five year plans. It has also been responsible for drawing up the annual work plan and budget of the PCO. It has monitored Project activities, particularly those managed directly by or with the PCO.

In 1982, the unit conducted evaluations of the educational component and the cottage industries training program. In 1984, it evaluated the Small Farmer Development Program and the local drinking water systems.

c. Building Program

Under the Project, some fifty buildings have been authorized for construction (see Annex 15) in the five Districts. A portion of this construction was managed directly by the line agency involved (e.g., the construction of the Zonal headquarters for Soil Conservation). However, as noted above, the Technical Support Unit (TSU) of PCO has designed contracted for, and supervised construction—with some participation from DTOs—for district buildings (see Annex 15), including District godowns, training, and conference centers, DTO offices and five district service centers (see Annex 18).
d. **Small Rural Works Program**

The PCO, through its TSU, was heavily involved in the study, design and approval of rural works projects, of which 72 have been approved to date and 53 completed (see Annex 14). The Unit also provided technical guidance to District Technical Offices, including guidelines and manuals (for example, a manual [in preparation] on feasibility studies, and a technical guide on suspension bridge construction). The DTOs are also responsible for construction of substantial amounts of HMG-financed rural public works.

e. **Logistic Support**

The Logistic Unit of PCO provided most of the materials required for the buildings program (that portion not provided by contractors or by line agencies), for the small rural works program and for the school improvement program. Districts have demonstrated a capacity to procurement on their own, and the PCO is in the process of transferring procurement for the rural works program, including school improvement, to LDOs, all of which have a procurement unit.

f. **Training**

Training has been carried out by the PCO's TCU In-country under workplans approved as part of the PCO's annual program, Participant training has been carried out in India and other countries. Altogether, the TCU of PCO managed more than 4,500 person-days of formal training of which:

- 45 percent was technical training for engineers, overseers and accountants;
- 31 percent was training for trainers;
- 21 percent was training in program planning and review; and
- 3 percent was for professional management seminars.

As of August, 1985, 74 individual third country training programs were completed and another 28 were underway or being arranged (see Annex 21-2).
In the period December, 1983 to January, 1984, the PCO and USAID organized courses in district and village-level development planning and related activities in all five Districts of the Zone. This training was carried out as a pilot effort to be reconsidered once the Decentralization Act by-laws and regulations were promulgated (which occurred in 1984). ²

PCO and USAID sponsored a comprehensive study³ of the Rapti IRD Training Program under a USAID contract with Planning Development Collaborative International (PADCO) in 1984. The study helped develop a strategy and plan which PCO has adopted and which directs Rapti Project training towards:

- Planning and management skills, training for District and Village Panchayat staff (including line agency officers assigned to District) covering:
  - Annual planning and budgeting;
  - Project management;
  - Monitoring and evaluation; and
  - General management; and,

- Technical skills training in:
  - Local development, including local rural works;
  - Agriculture, including cropping systems, horticulture and livestock;
  - Forestry; and
  - Socioeconomic analysis.

An important output was the establishment of a training and conference center in each District (previously there were no such centers). The TCU conducted a number of training for trainers programs. It has recommended that training officers be trained for each District headquarters under the LDO.

²Language Culture Training and Research Center, Local Level Planning and Related Training Programs in Rapti Zone, Kathmandu, March, 1984.

g. **Financial management**

The FMU of the PCO, as reorganized in 1984, comprises a Chief Accounts Officer, a Reimbursement Officer and five assistants. From July, 1981 to August, 1984, an expatriate advisor worked with PCO. He was responsible for establishing and maintaining effective financial management and accounting systems for all project supported activities, including the Project Coordination Office.

The FMU provided day-to-day financial management for PCO and the program, including:

- Prepare action of annual budgets;
- Release and disbursement of funds;
- Financial accountability and monitoring; and
- Requests for reimbursement.

In addition the FMU, with the help of the expatriate advisor, supported, guided, encouraged and provided on-the-job training over a three-year period to about thirty District accountants involved in the Rapti Project.

The final report of the financial management and accounting division provides useful suggestions for continuing measures to deal with the recurring problems of financial management and accounting and on donor problems.4

h. **Support for Sectoral Programs**

The organization of the PCO did not include technical capability to support sectoral components of the program, such as road construction, soil conservation, medium irrigation, education, livestock, agriculture and forestry.

The Project's rural road program was managed by a Zonal Office of HMG Department of Roads. Soil Conservation and medium irrigation programs were managed by Zonal Offices established by the DSCVM and the DIHM.

Zonal offices were not established by other concerned Ministries and Departments, and support provided from Regional Offices in Surkhet was perfunctory at best. This lack of technical support in key sectors has contributed to problems of implementation and short falls in realization of Project targets.

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The lack of direct technical support was particularly critical for Project undertakings in local development and agriculture, and forestry and renewable natural resources.

To remedy this situation, the PCO was able to play a constructive role by using expatriate and locally hired technical assistants assigned directly to the Project Coordinator's Office (see Annex 23, Technical Assistance).

In the case of agriculture, an expatriate advisor served approximately three years to help districts organize and carry out the important cropping systems program, including pre-production verification trials for wheat, maize, paddy and mustard (see Annex 4). This expatriate assistant/advisor has since been replaced by an experienced and competent Nepalese agricultural consultant on leave from the Department of Agriculture. Unfortunately, no similar arrangement was made for the livestock program (see Annex 5).

For forestry and renewable resource management, the Project hired a full-time expatriate forestry consultant to work with the Project Coordinator out of the PCO Office in Tulsipur and to work with and advise District Forest Offices on the implementation of the program. At approximately the same time USAID engaged a senior Nepalese forestry consultant to work out of its Rural Development Office. Together, these two consultants worked with the Department of Forest and the District Forestry Offices to accelerate implementation of the program.

E. Problems and Constraints

Financial management problems encountered in the implementation of the Project were national in scope and beyond the power of PCO to resolve.

Insufficient direct support by line agencies in cooperation with PCO as the agency established by HMG to provide strong Project support and direction seriously affected effective program implementation, particularly in the cases of food and agricultural production and forestry and renewable natural resource management.

Difficulty in filling authorized positions in the Districts and rapid turn-over of District staff were and continue to be important constraints in the process of decentralization and the build-up of District capability to plan and manage local development. This has caused delays in the transfer by the PCO of full responsibility to Districts for rural works project design and approval.

E. Measures of Progress

Measures of progress include work accomplished under the program in rural works in strengthening District capability in planning and managing local development activities, in food and agricultural development, and in forestry and natural resource management.
Measures of progress in the PCO's coordination role include meetings to bring together the officials involved in implementation. In this regard, the PCO organized each year a major planning seminar with USAID participation in each District to formulate jointly with District authorities the annual Rapti Rural Development Workplan and Budget for approval by each District Panchayat. The PCO also took responsibility for the lengthy and complicated process of HMG review approval of these plans involving review and approval by many Departments in line agencies, the MPLD, the National Planning Commission and the Ministry of Finance. The PCO also participated in annual meetings of District Agricultural Development Officers in the Regional Office in Surkhet. It held annual meetings with Zonal and Regional representatives of line agencies and LDOs, and attempted, with limited success, to organize them every four months.

F. Finding

The PCO has functioned as the centerpiece for overall financial management, project guidelines and direction, technical support and coordination. The project has achieved a considerable degree of success in institutional development, building up District and Village Panchayat capacity to plan, manage and sustain development. The PCO has provided major inputs into this process of institutional building for decentralization and local development planning and implementation and deservedly shares the credit with the Districts for the considerable progress achieved. Although PCO has also supported program efforts in agriculture and forestry, it has not been well-structured or well-equipped to provide program guidance and direction to these important programs (see Annexes 4, 5, and 6). Project results in these programs have been less than satisfactory.

G. Conclusions

The PCC currently operates as an arm of the MPLD and the National IRD Committee in carrying out Ministerial responsibilities for providing overall direction, guidance, coordination and management of the Rapti Zone Project. The PCO continues on an interim basis to carry out functions for rural development which are to be transferred to the Districts when the DTOs are sufficiently strengthened.

The PCO has not been able to address fully the difficult financial management problems which affect program implementation and which are national in scope.

In accordance with HMG's policy to provide a strong coordinating and facilitating role in integrated projects, the project design placed great emphasis on the PCO. However, the lack of sufficient direct involvement by line agencies in several areas, particularly agriculture, livestock and forestry impeded effective program coordination and technical support for the programs.
The reorganization of the PCO in May 1984 eliminated unnecessary administrative functions and reoriented the PCO's role much more to the concept of a support group on call and able to assist the Districts in building up their capability for development planning and implementation.

H. Recommendations

- Recommendations for Project Management are given in Annex 24;

- Measures are needed to accelerate the strengthening of DTOs; a target date should be set for accomplishing this transfer of authority to the Districts. The PCO should set as a deadline the end of 1986 for the transfer of responsibilities for rural works program design approval to Districts;

- The PCO should expand training for Districts in planning and management skills and in technical skills;

- The PCO should intensify its evaluation program (for example, evaluations of the effectiveness of extension services out of District sub-centers or of the agricultural supply system in delivery of improved seeds);

- The staff of PCO should be reduced--and District staffs correspondingly strengthened--as functions are transferred to Districts.
ANNEX 21-1

RAPTI IRD PROJECT COORDINATOR'S OFFICE (PCO)

USAID ---------------- MPLD

Project Coordinator
G-I

Technical
Assistance Team

Personal Assistant
NG-I

Administrative & Procurement Unit
(APU) G-1, NG-17 = 78

Admin./Procurement Officer G-1
Admin. Unit  Proc. Unit
Administrative Assistant (NG) 1
Procurement Assistant (NG) 1
Store Keeper (NG) 1
Office Assistant (NG) 1
Office Attendant (NG) 1
Secretary/Typist (NG) 1
Drivers (NG) 6
Mechanic (NG) 1
Junior Mechanics (NG) 2
Gardener (NG) 1
Watchman (NG) 1
Stable Attendant (NG) 1
Peon (NG) 1
Guest House Keeper (NG) 1

Financial Management Unit
(FMU) G-2, NG-8 = 10

Financial Controller
Section
Accountant (G) 1
Accountant (NG) 2
Typist (NG) 1
Peon (NG) 1

Reimbursement Section
Officer (G) 1
Officer (NG) 1
Typist (NG) 1
Peon (NG) 1

Planning & Monitoring Unit
(PMU) G-3, NG-7 = 10

Planning Officer (G) 1
Monitoring Officer (G) 1
Research/Evaluation Officer (G) 1

Planning Officer (NG) 3
Monitoring Officer (NG) 1

Training & Communication Unit (TSU) G-2, NG-5 = 7

Training Officer (G) 1

Training Officer (NG) 1

Communication Specialist (G) 1

Office Assistant (NG) 1
Office Assistant (NG) 1
Office Assistant (NG) 1
Office Assistant (NG) 1
Office Assistant (NG) 1
Office Assistant (NG) 1

Technical Support Unit (TSU) G-4, NG-11 = 15

Technical Support
Officer (G) 1

Technical Support
Officer (NG) 1

Panchayat Trainers (G) 1

Kathmandu Support Unit
(KSU) NG-5 = 5

PCO Representative (NG) 1

Radio Operator (NG) 1
Typist (NG) 1
Driver (NG) 1
Peon (NG) 1

Gazetted 11
Non-Gazetted 64
Total 75
## ANNEX 21-2

### Participant Training Under the Rapti Zone Rural Area Development Project

<table>
<thead>
<tr>
<th>Cost Code</th>
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<th>Site</th>
<th>Duration (FIN)</th>
<th>Name</th>
<th>RFD/P</th>
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ANNEX 22

Local Development Officer
ANNEX 22

Local Development Officer

A. Summary

The Local Development Officer (LDO), as Executive Secretary of the District Panchayat, has been and is a key player in HMG's program to decentralize local development planning and implementation to the District and Village Panchayat levels. The Rapti Project has provided assistance to strengthen the District Panchayat Office, including its organization, staffing, physical facilities and operations. This annex reviews assistance provided under the project and the enhanced role of the LDO and the District Panchayat Office under the Decentralization Act of 1982 as implemented in 1984. The success of on-going development efforts in the Rapti zone will depend very much on the effective organization, staffing and management of the District Panchayat Offices in the five Districts; continued assistance will be required to support these institutions in the recommended second phase Project.

B. Background

The Project Paper recognized the importance of strengthening District Institutions as part of the overall Rapti Zone development effort. It proposed support for upgrading physical facilities, increasing staff levels, and improving the logistic support ability of both LDOs (then CDOs) and District Technical Officers (DTOs).

The Project Agreement provided for AID support for District development of approximately US$ 1.3 million and HMG support of US$ 0.4 million (equivalent) over the five-year period, 1980-85. Specifically, the Project Agreement provided for:

- Support for physical upgrading, equipping, increased staffing and logistic support ability of both the Chief District Officers' (starting in mid-1980, the LDOs) Offices and the District Technical Offices (DTOs);
- Storage facilities at each District Center so that construction materials would be more easily accessible for local development efforts;
- Multi-purpose training centers to support training activities, meeting of committees, etc.;
- Improved communication facilities for the districts through the installation of solar panels to provide more reliable energy for existing transceivers; and
Funds for study and observation tours for local officials and for training of village leaders in various development skills, including public health, sanitation and family planning.

The 1983 Special Evaluation recommended that the Project Coordination Office in Tulsipur be phased out and that institutional development should be focused on the District Panchayats, and particularly on the role of the Local District (sic) Officer (LDO) without creating another layer of administration. (It also recommended that District Treasury operations should continue to be strengthened, that greater local resource generation should be stimulated, and that the Project Coordination Office should be replaced with a small Technical Resource Service—see Annex 21.) The Special Evaluation further recommended that the Decentralization Act of 1982 should be implemented in full to give the districts clear authority, responsibility and capability for their development programs.

The Decentralization Act was implemented by regulations promulgated in December 1984. The implementation of the Act has substantially increased the responsibilities of the District Panchayats and Assemblies for local development planning and administration. Under the Act as now enforced, Districts have become responsible for planning sectoral activities including agriculture, livestock, forestry, soil conservation, education, health, etc. Previously, sectoral development in Districts were planned by the line agencies with inputs from their staff in the Districts. Observations and requests on these plans were provided by the nine District Development Committees. Henceforth, sectoral programs for a District are to be formulated by the District Committees, taking into account expressions of needs by the villages and financial ceilings and guidelines provided by the central government (Ministry of Finance, National Planning Commission and line agencies). Line agency officers assigned to the Districts—in offices redesignated as District Line Agency Offices—will sit on the development committees as members.

The new system of sectoral planning of District programs went into effect with the Seventh Five Year Plan, drawn up in 1984, and with the preparation of the national 1985/86 development program, also drawn up in 1984. This new system will require a period of transition and considerable support to Districts before it can be expected to become effective and, importantly, before line agencies become comfortable with and supportive of it. The proposal for the second phase of Rapti Zone development is directed at the problem of strengthening District planning and implementation capabilities in light of their new responsibilities and with particular emphasis on agriculture, livestock, forestry and soil conservation.
The Local Development Officer, as Executive Secretary of the District Panchayat, has been and is a key player in HMG's program to decentralize. Over the period 1980-85, the Rapti Zone Project has provided assistance in accordance with the project agreement to improve the operations and capabilities of the District Panchayat Office. Under the Decentralization Act, as empowered in 1984, the authority and responsibilities of the LDO have been expanded (see Annex 22-1). LDO duties and functions now include:

- Convening of District Committees to formulate District long-term plans and annual programs;
- Execution of the District Development Plan, as approved by the District Panchayat and Assembly;
- Monitoring of all construction work done by the District Panchayat;
- Administration of the District Panchayat Office, including the District Planning Unit, the District Technical Office, the District Training Unit and the District Warehouse;
- Execution of administrative decisions of the District Panchayat and Assembly; and
- Filing and maintenance of District and Village Panchayat documents.

C. Project Assistance

1. LDO Budgets

Budget assistance was provided to each District Panchayat Office totalling Rs 4.6 million from 1980 through September, 1985, of which HMG's contribution was 34.56 percent and USAID's 65.55 percent. This funding—about US$ 300,000 assuming an average exchange rate over the five years of Rs 15 = US$ 1.00—covered operating and administrative expenses of the offices, including those of the training units, the planning offices, women development officers and the DTOS (1980/81 and 1981/82 only).

2. Physical Facilities

The Project financed construction of DTOs, Training Centers and Warehouses (see Annex 15).


The Project financed technical, logistic, planning, training and financial management support from the Project Coordinator's Office (see Annex 21).
4. Improved Communications

The project provided solar panels for powering District transceiver equipment (currently the only means of communication with Salyan, Pyuthan, Rolpa and Rukum; only Dang has telephone communication with Kathmandu).

D. Findings and Conclusions

The effectiveness of decentralization institutions—the District and Village Panchayats and Assemblies and the Development Committees—will be critical to the success of on-going development efforts in the Rapti Zone. Their effectiveness will depend very much on the effective organization, staffing, financing and management of the District Panchayat Offices. During the past five years these offices have been strengthened by the addition of planning, training, logistics and field operations units and by support for the DTOs. Continued support will be required during the second phase of Rapti Zone development, with increased attention to District Agricultural, Livestock, Forestry and Soil Conservation offices.

The small rural works program (see Annex 14) and the programs for primary and secondary school improvement and for village adult training in literacy and local development (see Annex 19) have proven effective instruments to introduce processes of planning and implementation of local development projects to Village and District leaders. Village Panchayats and other local organizations have demonstrated a capacity to involve people in the planning and implementation of projects and in mobilizing significant levels of local resources in support of such projects. Under the small rural works program, some 72 projects were approved. Under the school improvement program, about 125 schools were improved, but many more than that were not.

E. Recommendations

Support for local development projects should be continued under a second phase Project. Technical support and assistance to Village Panchayats and local user committees for such local development projects will be an important, continuing role for the LDO and the District Panchayat Office.
ANNEX 22-1

Functions, Responsibilities and Rights of Local Development Officer

The Local Development Officer (LDO) should exercise the following functions, responsibilities and rights as mentioned below.

A. Works Regarding Development

The following works should be done regarding district development:

- To convene the meeting of various committees in order to formulate district development plan in exercise of the right conferred by this Act and the Rules and Regulations;
- To inspect the district-level and village-level projects executed in the district and make necessary provision for the solution of problems;
- To convene the meeting of supervision committee and execute the decisions of the meeting;
- To make necessary provision for the recovery of the overdue expenditure in the just completed project through the performance audit committee in exercise of the right conferred by this Act and these Rules and Regulations;
- To make provision of construction materials required for the project;
- To execute the district development plan approved by the district assembly;
- To keep the record of Consumers' Committee in the district; and
- To keep the record of construction work done by the district panchayat.

B. Financial Rights

The LDO should exercise the following financial rights:

- To exercise the financial rights in accordance with the provision made in these Rules and Regulations;

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To keep the accounts of income and expenditure of district panchayat up-to-date in accordance with the provision made in the Act and these Rules and Regulations;

To check whether the record of income and expenditure of town and village panchayat has been maintained in accordance with the prevailing Nepal laws and order to keep them in the proper order;

To assist in the internal and final auditing of local panchayat every year;

To spend the fund of district panchayat in accordance with the provision made in the Act and these Rules and Regulations;

To inspect if the fund of town and village panchayat has been spent in accordance with the provision made in the Act and these Rules and Regulations;

To make provision of clearance of the irregularities in the expenditure made by the branch office for the works under the district development plan found from internal auditing and those pointed out by the Auditor General’s Office;

To fill up and send the estimated budget required in the coming fiscal year for the branch office within time and pattern fixed by Finance Ministry, His Majesty’s Government and the supplementary budget for the current fiscal year; and

In case, the irregularity mentioned in the audit report of local panchayat cannot be regularized from the concerned person through the concerned panchayat secretary. In case, the irregular could not be realized anyhow, information should be given to the zonal commissioner in the case of district panchayat or town panchayat or to the Local Development Officer in the case of village panchayat.

C. Administrative Rights

The LDO should exercise the following functions regarding administration:

To execute the decisions of district panchayat and district assembly;

To keep the documents of district and village panchayat safe and in systematic order;

To take the data of cash goods in the district panchayat and maintain their records;
To maintain the records of cash goods of village panchayat;

To keep the premises of buildings of district panchayat and branch office and open space neat and clean;

To dispatch the decisions of district panchayat, district assembly, meetings of committees or sub-committees of district panchayat to the members of concerned panchayat and His Majesty’s Government;

To inspect the branch office and district panchayat, to make surprise checks, and take actions on the staff found guilty;

The LDO may delegate some of his powers to the chief of branch office and other staff under him. The power thus delegated may be withdrawn any time;

In case, any post is vacant, the district panchayat, town panchayat and village panchayat and in case, selection has to be made through voting, the matter should be forwarded to the panchas and Local Development Ministry giving reasons for the same;

To exercise the administrative rights in accordance with the provision made in these Rules and Regulations; and

To execute the instructions and guidelines of His Majesty’s Government.
ANNEX 23

Technical Assistance
ANNEX 23

Technical Assistance

Technical assistance has been a major input into the Project, amounting to US$ 3.2 million in expenditures as of September 30, 1985. This total represents 21 percent of total Project expenditures.¹ The technical assistance provided has contributed importantly to Project outputs. These outputs have been fully reviewed in the component evaluations. (See Annexes 4 through 24.)

Technical assistance provided under the contract included both expatriate and local consulting firms, as shown in Table 23-1. Annex 23-1, prepared by USAID/N, provides further detail. Advisors provided by PADCO (in accordance with its contract with USAID) were assigned to work within the PCO as individuals advising different units; the contract with PADCO provided that the individual advisors would not be considered a supplemental team which would make project-related decisions separate from PCO. In practice, this meant that in the first three years of the project, these advisors functioned as individuals, and PADCO was not able to adapt team positions in advising PCO and USAID on program development.

Because the evaluation was carried out on a component-by-component basis, no special attempt was made to evaluate the performance of PADCO or any other contractor; nor did AID expect the team to do so. However, the team observed that considerable useful work had been accomplished with the help of TA consultants as is noted in the component Annexes.

Readers may also wish to note the following major reports and studies prepared by or with the assistance of TA personnel (of the scores of reports which were submitted):

- Sweet’s Report on financial management;
- Smith’s Report on the Cropping Systems Program;
- PADCO’s quarterly and annual Reports;
- PADCO’s "Strategy and Plan for Training and Communications under the Rapti Project";
- Conley and Upadhya’s report on the natural resource development component of the Project;
- No-Frills’ reports on agricultural inputs and on households production systems in the Rapti Zone;

¹Data provided by USAID in October, 1985.
Table 23-1: Technical Assistance Expenditures, FY 1980-1985

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Total Expenditures\(^a\)  

| Total TA                       | 1811.0     |

Percent TA of Total Expenditures  

| Percent TA of Total Expenditures | 17.5       |

\(^a\)Includes HMG contribution of US$ 2,699 (not including fertilizer subsidy and in-kind contribution).
PADCO's Regional Assessment;

Pragma's reports on appropriate technology activities; and

L. Berger's report on the Rapti Roads.

As noted in Annex 24, the Evaluation Team recommends that expatriate technical assistance should be provided in a form that gives the contractor greater corporate responsibility for assisting HMG in implementing the project.
ANNEX 24

Management Issues
ANNEX 24

Management Issues

A. Summary

The management problems of the Rapti Project are partly exogenous in origin and have been improving. Nonetheless, they remain serious, and a major focus of the Evaluation Team's efforts has been to form recommendations that address constraints on project effectiveness through management improvements. These include changes in project scope, structure, staffing, and Mission management patterns—in fact, a follow-on project of different design.

B. Background

The Rapti Project has always been the subject of unusual scrutiny in Washington, for reasons not entirely its fault. The project was designed and begun in the heyday of one of the endless parade of donor fashions, as an integrated rural (IRD) development project. No sooner was it underway when the wheel turned, IRD projects fell out of favor, and were replaced by other donor fashions. USAID and HMG (as well as IBRD and HMG, UNDP and HMG, Canada, UK, Switzerland and HMG, etc.) were left with unfashionable projects to implement, to which not only had the donors made financial commitments, but HMG had made unusually profound political as well as financial commitments. These problems have been compounded by increasing financial and human resource constraints within AID, by imperfect mutual understanding between Mission and Bureau leadership, and by the particular difficulty of doing business in Nepal. The geographic, financial, administrative, and developmental problems of this country are very different in kind and in degree from those of other countries within the purview of the former Asia Bureau.

Over the course of the project, and increasingly within the last year, project, contract, and Mission management staff have been working with energy, imagination, and dedication to address management problems. In the area of monitoring and evaluation data collection, the Mission began to follow-up on Smith and Korn's recommendations from the day the consultants left. They have reorganized existing data on program achievement, personnel and training for each component, and are collecting new data where needed. All data is being entered into dBase II files to be used as part of their Mission's computerized project information system. This data was made available for use by the Evaluation Team, and proved extremely helpful; some is included in component Annexes. It should also serve to help continuing program review with project agencies and for future planning purposes.
Despite this progress, the Mission has not entirely succeeded against the odds. The recommendations that follow are offered in a spirit of admiration for its efforts, and in the hope that they will be helpful in reducing the management task to the level of the humanly possible.

C. Recommendations

1. Narrowing/Focusing

The major reason for the donor shift against IRD projects was the conclusion that they are too complex to administer. This may not be axiomatic, but there is a certain amount of truth to it; the management task for the Rapti project was multiplied, and management energies diffused, by the very variety of sectors and Ministries demanding attention. Accordingly, the Team has recommended that the second phase of the proposed 15 to 20-year effort by HMG and USAID for the development of Rapti Zone take the form of a new local development project much more focused on agriculture (including livestock) and forestry/natural resource management, rather than an extension of the existing IRD project. Other activities designed into the old project—health, education, family planning, cottage industries, credit, "medium" irrigation, and road construction—that can be better managed either through other, nationwide USAID projects or through programs of other donors—should be so managed. This should leave a manageable unit for a follow-on project.

This recommended approach does impose a new task for project management and for Mission strategy: to ensure that Rapti Zone gets at least its fair share of other Mission and donor project action. Although critical, the net burden of this intra-mission and other donor coordination would be far less than heretofore; and that burden is more widely shared throughout the Mission. The project management burden would be similarly shared, through the donor community.

2. Policies, dollars, and rupees

Most of the costs of the Rapti Project have been local costs. Many of the problems of financial management under the project—ranging from timing of releases to the thorny issue of not paying for "tea and snacks" that consumed all project managers for weeks in 1985—have to do with local currency management. At the same time, large visible chunks of foreign exchange are highly valued in Nepal. In terms of policy dialogue, the decentralization plan that the HMG has taken to heart and is implementing would be a policy reform triumph in most AID-assisted countries, but there are a great many more policies whose amendment is integral to the success of even the more narrowly focused follow-on project. These include privatization of agricultural inputs and especially fertilizer; filling of authorized but vacant field positions, more serious address to women in development, etc. Some of these policy objectives will be difficult to achieve.
The idea here is to explore the possibility of making the majority of annual project costs that represent local currency expenditures available early in the fiscal year in the form of fertilizer imports for the Rapti Zone. The local currency counterpart of those early dollars would be programmed as Project rupees are now, but perhaps with some greater flexibility because they would be HMG's rupees, although they would be programmed jointly with USAID. It is not possible to develop this idea fully here; our aim is merely to recommend that it be explored in the follow-up project design as a means to increase policy dialogue accomplishments while decreasing financial management problems.

3. Level of government

Like other IRD projects in Nepal, the focus of design and implementation are at the Zonal level of government. Under the Decentralization plan, however, authority and responsibility are being devolved rapidly to the District level of government; there are five districts in Rapti Zone. However, the Zone in general plays no particular role in the scheme except as a jurisdiction for the Project Coordinator's Office (PCO). The intermediate unit of government with increasing responsibility for coordination over the Seventh Plan is supposed to be the Region. The Mid-Western Development Region, of which Rapti is only one of three Zones, is comprised of a total of 14 districts. Thus far, this Regional level of government has had virtually nothing to do with the Rapti Zone project operations heretofore, despite its formal charge for the development of the area including the project.

The team recommends that the Regional level be involved closely in the new project; that the PCO be de-emphasized as a management unit in the follow-on project; and that an interagency sub-regional office, with a direct link to the nascent regional level of government in Surkhet (where additional authority to promote local cooperation among reluctant line agency staff reside), will help coordinate and support the Project at the District level. Aspects of PCO project implementation will devolve to the district level directly as fast as the Districts are capable of handling them. This should further improve project management.

4. Contracting

The primary Project contractor, PADCO, Inc., did not have corporate responsibility for the Project; rather it provided individuals or contractually housed other individuals found by the Mission. This is apparently the way the Project was designed, but it frustrates the direct-hire staff-saving purpose of technical assistance contracting.
Any expatriate technical assistance required in the follow-on project should be provided in the form of a corporate or institutional contract that gives clear responsibility to the contractor for assisting HMG in carrying out the project, leaving for Mission personnel more of a management and less of an implementation role.

5. **Mission Staffing**

The Rural Development Office, which manages the Rapti project and only the Rapti project, is staffed by seven direct-hire (DH) personnel—two US and five Nepalese—in addition to an IDI, for whom an additional slot is open, and a variety of project contract-funded staff. All seven (eventually eight) direct-hire staff are funded from the Operating Expenses account, despite the fact that since they all work on a single project they may be eligible to be paid out of program funds. It is possible that fewer than three USDH and five FNDH personnel might be required to manage a more focused follow-on project. But however many they are, they should be charged to the project. Project funding and OYB should be increased by AID/Washington accordingly and without cavil, while OE funds are in such short supply relative to program. The OE savings should be substantial.
ANNEX 25

Nutrition/PL 480 Integration/Peace Corps Coordination
ANNEX 25

Nutrition/PL 480 Integration/Peace Corps Coordination

A. Summary

There is considerable malnutrition in the Hill areas of Rapti Zone, which the first phase of the Project failed to address. It is recommended that the existing World Food Program channel food-for-work (FFW) to these areas in support of nutritional and local development objectives under the follow-on Project, strengthened by expanded employment of Peace Corps Volunteers at the District level.

B. Nutrition

The Evaluation Team did not include a nutritional expert. However, evidence and reports of malnutrition, in the Hill Districts especially, presented themselves repeatedly and unavoidably. These are known to be food deficit areas, and the swollen bellies and patchy skins observed during the field work made the issue graphic.

In Rolpa, for instance, a survey carried out by the Family Planning Officer as a matter of his own personal interest indicated 27 percent of the estimated 19,800 children under five years old were in a condition of third-degree malnutrition. His estimate of total malnutrition in under-fives was 60 percent. In a separate interview, the District Health Inspector told us of a nutrition survey that had been carried out at one health post (selection criteria not known) over a three-month period. Of 2,295 children under five, 1,048 children were described, as "well", and 1,247, or 54 percent, were described as "malnourished". Of the latter, 489 or 21 percent of the sample were "severely malnourished".

Better malnutrition survey data was not available to the Team. However, there is obviously considerable malnutrition in the Hill areas, and it is regrettable that the HMG/USAID commitment to the development of the Rapti Zone failed to address the problem adequately.\(^1\) Given the decision to focus the project more tightly on

\(^1\)The project paper proposed to improve food consumption levels through widespread production increases (including pulses) coupled with: a) the establishment of vegetable "kitchen gardens" in 45 percent of the households in the Zone; b) an intensive effort in basic nutrition education carried out through agricultural extension personnel, local leaders, small farmer groups, health workers and schools; and c) pilot efforts in improving on-farm processing and storage of food stuffs. The targets for increasing cereals and pulse production and for vegetable gardens were far from met (see Annex 4) and an effective, coordinated effort for basic nutrition education was not carried out.
the productive agriculture sector, and given management and financial resource constraints, the rural works/local development component of the follow-on project should be supplemented by a food-for-work (FFW) program that will deliver food to alleviate hunger and malnutrition.

Furthermore, HMG and USAID should consider the potential for supporting community-level forestry, soil conservations and grazing land development at the Village Panchayat level with FFW programs. A recent study sponsored by the Peace Corp's Forestry and Natural Resources Sector and AID's Bureau for Science and Technology analyzes options and guidelines for community-level forestry development supported by PL 480 FFW and Peace Corps Volunteers.2

C. PL 480

In December, 1984 a team prepared a report on FFW possibilities in Nepal. The Rapti Evaluation Team was told that the recommendation had been against a bilateral FFW program in Nepal. This was on the grounds of management problems and ability of HMG to pay its share of program costs.

The report also, however, points out that the ongoing World Food Program (UNWFP) is operating a FFW program in Nepal, and it goes on to describe fairly enthusiastically the possibilities for coordination with USAID projects in general and even Rapti in specific. It is worth quoting at some length from the report. Referring to an existing example of coordination between the UNWFP Food for Work Program and a Swiss IRD project, the report states:

This model of cooperation between a bilateral development agency, SATA, and multilateral food aid donor, WFP, merits closer consideration on the part of USAID. There is ample opportunity for such mutual reinforcement in cases where USAID is undertaking major development schemes which employ large numbers of laborers in food deficit areas. WFP, as is always the case, is constrained by lack of money to transport food and use the commodities in the context of sound and well-managed development projects. Integration of financial aid supplied by USAID and food aid provided by WFP is thus a viable possibility. Such cooperation should be considered before exploring a new PL 480 Title II Program in Nepal. There is no reason for USAID not to seek the cooperation of WFP in projects where food aid is deemed legitimate—where the project will greatly increase the demand for short-term food supplies in food deficit regions. Such complementary

approaches can serve to benefit both USAID and WFP, taking advantage of the institutions' respective comparative advantages.

One specific example, explored with both WFP and the USAID Rural Development Office, was the possibility of collaboration in an element of the rural development scheme. WFP assistance, as partial payment in kind along with cash wages, appears to be a reasonable proposition. Not only will WFP be assured that its commodities are used appropriately for developmental purposes, but USAID's limited resource base will be expanded. Needless to say, some of the logistical and managerial problems incurred with the SADA project will have to be addressed in any such collaboration. However, we foresee no major obstacles to developing a realistic and implementable plan of operations in this context...

There are certain realities worth recognizing. The first of these realities is that the WFP has ample food resources available for programming in Nepal. If well designed projects were developed, there is every reason to expect Rome to be forthcoming with an increase in food allocations. Given our conclusion that food aid in Nepal suffers from inadequate programming, it would seem more promising to explore modes of cooperation between USAID financed development projects and the World Food Program. The second reality, that food aid projects are not now integrated sufficiently with broader development activities, represents a real potential, when appropriate, for complementing present and future USAID funded activities with food assistance through the World Food Program, without commencing a new PL 480 effort. The long experience of WFP, coupled with the third reality that it should be almost as easy for USAID to co-sponsor projects with WFP as between a PL 480 office and other offices within USAID, commends building upon existing donor activities.

Given these general remarks, our specific recommendations are presented below...

Rather than begin a PL 480 Title II program in Nepal, USAID should explore direct cooperation with WFP on projects for which a food aid component is concluded to be appropriate. This will both help WFP use their resources in more developmentally sound activities, while allowing USAID to enjoy and take advantage of additional food resources in the proper circumstances, without all the bureaucratic strain of a bilateral effort.
Monetization of food aid holds little promise in Nepal. It may in fact further depress prices paid for local commodities, as there is not a government mechanism capable of handling the food in such a way as to preclude disincentive effects.

Consideration should be given to legalizing the defacto paying of porters in kind for carrying the food aid to remote project areas. This will help defer a major financial burden on HMG which is charged with the cost of inland transportation and handling. Use of porters increases employment and is preferable for that reason to high cost air transportation.3

Payment in kind for porterage to food-deficit project areas, a practice now in use by HMG's National Food Corporation, should help decrease dangers of diversion of food across the Indian border rather than to the Project area. Payment or partial payment in food for labor costs of rural works should extend the Project's ability to fill these highly valued small productive rural works at an expanded level at less cost, and might usefully be extended to project building construction. Conducting the program through UNWFP rather than directly should minimize the incremental management and monitoring burden placed on the Mission. The nutritional benefits of the food provided should be supplemented by those of the drinking water systems constructed, given the relationship between diarrheal disease and the quantity (let alone quality) of water available. And finally the coordinated approach should combine AID prescriptions for increased donor coordination with the developmental use of PL 480 in the most meaningful way.

D. Peace Corps Cooperation

One of the several quiet successes of the Rapti project has been the extensive and productive coordination of Project resources with Peace Corps Volunteer (PCN) efforts. There are about two dozen PCVs assigned in Rapti Zone, about half working directly on project activities, including agriculture, forestry, PCRW, ATU, and minor irrigation.

The third leg of the nutrition/Food-for-Work/Peace Corps proposal is that the implementation of the follow-on Project depend upon specifically trained PCVs in agriculture, forestry and local development related disciplines to provide TA at the District level. For example, the expanded rural works/local development effort, which is the responsibility of the competent but understaffed LDO and District Technical Offices (DTO), would be expanded by the assignment of at least two engineering PCVs to each affected DTO. The HMG would

be required to staff the LDOs and DTOs accordingly so the PCVs would have counterparts in place from the time of their assignment.
Likewise, at least one counterpart PCV should be assigned to the ADO and FDO at the District level. Initial conversation with PC/Nepal indicated interest in this proposal, which would greatly strengthen the institution-building aspects of the rural works/local development effort, optimize the effectiveness of the FFW input, and create that dynamic combination—a PCV with resources.
ANNEX 26

Women in Development
USAID/Kathmandu has maintained, in recent years, a leadership role within the former Asia Bureau in pursuit of Agency Women in Development policy objectives. Under the Rapti project, the Mission has carried out a considerable effort to address these objectives through project activities and personnel support. In cooperation with MPLD, for example, women development officers have been trained and assigned to Dang, Pyuthan, and Salyan Districts, and budget provisions have been made to train and assign women development officers during NFY 1985-86 to Rolpa and Rukum. In cooperation with Peace Corps three women counterparts have been assigned to work in Dang, Pyuthan and Salyan to work with the LDOs, line agencies, and villagers to initiate and implement women in development activities in selected areas of their districts.

Explicit attention has been paid to women as agents of development in the relatively new Production Credit for Rural Women (PCRW) program. As the evaluation of that component indicates (See Annex 11), however, the PCRW program is unlikely to have significant outreach because of structural flaws including funding and staffing. The SFDP program is making at least as great an impact on reaching women in the Rapti Zone as PCRW, with considerably greater potential also. However, in order to make significant inroads, the two programs should be combined or SFDP staffed up with more women. According to the evaluation team, the approach embodied in PCRW of women-specific project components is responsive neither to Agency policy on WID nor to Rapti Zone needs.

This is particularly the case in some of the poorest project areas, where seasonal out migration of men, usually to India for a full half of the year, leave substantial parts of certain Districts with a remarkably high number of female-headed households. In one Pyuthan panchayat, we were told, 498 out of 640 households had one or two members working in Kerala or Madras. The pattern apparently is not to leave the household in charge of a brother-in-law or grandfather; rather the wife is left to make such productive, economic, and/or agricultural decision as the household makes. Despite this context, the mainstream aspects of the Rapti Project (agriculture/livestock/farming systems/forestry) are not staffed with women to deal with these women decision-makers. Moreover, results of out-migration aside, the traditional role of women in Rapti zone agriculture is very significant, even with a resident husband. Women tend the livestock and are responsible for keeping them out of Panchayat Forests, for instance. They also do most of the agricultural production activities except for plowing and threshing, but including transplanting rice, weeding, harvesting, and marketing.
The PP did not ignore this need in the productive sectors. It ordained that "15,000 farmers (both men and women) will receive instruction in the availability and utilization of improved inputs and technologies." It called for achieving increased extension personnel targets "through an emphasis on recruiting local men and women." It said that "each of the 185 village panchayats will have at least five active trained "Leader Farmers" (three men, two women), who will assist farmers to evaluate and adopt improved farming practices."

The pattern of accomplishment, however, was somewhat different. Out of about 102 JTs and JTAs, one female JT is assigned to Rukum, although she lives in Dang with her husband. The Project trained two female AAs, and 88 male. Leader-farmer training was not disaggregated by sex; but the estimated number of females out of the 900 trained ranges from zero to "a few". Finally, farmer training consisted of 2,665 man-days and 459 woman-days.

It is very difficult for men to deal directly with women to transfer information in Rapti Zone, as this is done only through the woman's husband. Thus the project-assisted (or non-project-assisted) outreach services of the agriculture, livestock and forestry programs will not have an effective impact on women unless there are female workers--JTs and JTAs--to deal with these women. The almost perfect lack of female technical outreach personnel in these areas explains part of the limited productive impact these sectoral programs have had heretofore.

Such dysfunctional underrepresentation of females in the agro-technical sectors is far from unique in the Third World. However, the problem appears to extend even to the "soft" social sectors. School enrollment rates for boys are around triple those for girls, and female teachers are reportedly underrepresented. In Rolpa, no women were among the 29 high school teachers; there was one woman out of 84 lower secondary teachers; and 29 out of 578 primary teachers. In Rolpa, Team members were told that last year the health system served 6,000 girls but 8,000 boys and 10,000 women but 20,000 men. Even more unbalanced is the family planning situation, where despite priority of pills over condoms, and despite recognition that women family planning workers are much more successful than men at motivating women to contracept, only 14 of 73 field workers were women.

1. pp, p.8
Certainly existing methods of filling jobs with women have failed. However, in the productive as well as social sectors, women workers are needed to reach women, and these women need to be reached to achieve project purposes. Alternative methods to reach these women should be explored. Recruiting and training couples for social and technical outreach work like SFDP, agricultural extension or forestry, or training and paying salary supplements to wives of existing workers are examples of methods that should be tried.

Another suggestion for increasing women's local development involvement concerns the decentralization program at the District level. Each District Panchayat has a plan formulation committee, composed of five sub-committees: agriculture and irrigation; works and maintenance; industry, forestry, and soil conservation; health and population; and education. The chairman of the District Working Committee of the Nepal Women's Organization is an ex-officio member of the agriculture and health sub-committees, but this is not terribly effective. MPLD might require that a significant proportion of each committee membership be female. Also, MPLD might require that a sixth, Women's Affairs Committee be added to the decision-making apparatus as well, to reflect the actual productive importance of women in the decentralized local economies. If the recently maintained plan to assign some Women Development Officers at the District level on a pilot basis proves effective, perhaps the idea might usefully be extended to Rapti Zone. They could play a critical role in promoting women's interests and participation in the conduct of the full panoply of development programs in the District.

Whatever the organizational changes, it is clear that female technical staffing ratios will have to be improved at the District level if the follow-on project is to achieve its objective. This will require considerable policy dialogue and monitoring. HMG should appoint a WDO for each District to work with the LDO, sectoral agencies, and the woman's committee to work towards full participation of women in Rapti Zone development efforts.
ANNEX 27

Aggregate Components
ANNEX 27

Aggregate Components

A. Farming Systems

1. To what extent have increases in field crop, horticultural and livestock production increased the measurable aspects of the quality of life among participating rural farmers?

There have been no significant increases in production, except for wheat, outside of the relatively few areas where special programs have been targeted. Those farmers and farm households participating in these programs appear to be benefiting from these programs, which have been in existence for a very short time. No follow-up survey work has been carried out to quantify quality of life changes. The evaluation team talked with numerous men and women who felt that they had benefited from various of these special programs.

2. What is the significance of participating numbers of farmers in terms of the total farm population?

No study has addressed this question. The Evaluation Team judged that community forestry programs covered about 15 percent of the villages, that the livestock service had treated roughly 10 percent of the livestock population, that about 25 percent farmers were using improved seeds, and that about 5 percent of farmers were using fertilizer. As noted elsewhere, Cropping Systems Program PPV'Ts are being carried out in 25 of the Zone's 230 Village Panchayats. Block production programs are being carried out in 15 Panchayats by about 800 farmers, or about one in 200 farm households.

In target areas of the Small Farmer Development Program (SFDP) visited by the evaluation team, between 20 to 42 percent of the target area's small farmer households had members in SFDP group, significant rates of participation for a supervised credit program. Overall, the SFDP groups in the Zone had 2,600 farmer members in 1983. Many of these farmers had adopted HYVs and used fertilizer. On a Zonal basis, one out of 130 households were participating.

The Production Credit for Rural Women (PCR.W) program has begun to operate in three of the five districts in the Zone. Very few wards are affected, however, and only limited program expansion is likely. In 1984/85, 55 women were reported as members of 12 groups; some 950 women participated in the activities of these groups.

The Household Production Systems Program (HPS) has just begun as a pilot program in ten of the Zone's 231 Panchayats (including the Town Panchayat of Gorahi). It is well focused on the very poor. The initial pilot phase reached 34 households.
3. Can new initiatives in the Small Farmer Development Program, the Cropping Systems Program, Production Credit of Rural Women, and the Household Production Systems Program broaden the base for farmer participation and increase agricultural productivity and income? Are these programs replicable?

a. Small Farmer Development Program (SFDP)

SFDP programs are making a useful and growing contribution to the socioeconomic development of Rapti Zone. Beneficiary impact seems remarkable. The program provides an effective instrument to extend improved agricultural techniques and practices to poor farmers. The program could reach perhaps 6 to 8 percent of the farmers if doubled or quadrupled in scope. However, the high proportion of staff (many of whom are very dedicated, competent, and enthusiastic) needed to run the program makes it expensive to replicate (see Annex 8).

b. Cropping Systems Program (CSP)

The CSP offers significant opportunity for increased farmer use of improved technologies. Its strengths and weaknesses have been detailed elsewhere. Its replicability depends on its effectiveness in testing and identifying superior technologies which will spread through spontaneous adoption (see Annex 4).

c. Production Credits for Rural Women (PCRW)

The PCRW initiative faces several problems which limit its potential to broaden participation and be replicated:

- Separation of women's credit from mainstream programs such as the SFDPs;
- Limited commitment on the part of the banks; and
- Overqualification of WDOs.

These problems are discussed in Annex 11.

d. Household Production Systems (HPS)

Given its newness, the potential of the HPS is difficult to measure. It is well focused on the poor and is developing an effective bottom-up methodology for improving existing skills and household production systems. However, mechanisms for institutionalizing this process--imperative if it is to be replicated--are still being developed (see Annex 11).
B. Reforestation and Natural Resources

1. Is the Rapti project effectively addressing problems of deforestation and environmental degradation?

Project accomplishments in the first three years were limited and did not effectively address the problems of deforestation, soil conservation, environmental degradation or natural resource management. This failure was addressed in the 1983 Special Evaluation. In the past two years the Project has been addressing these problems more effectively. A full analysis of the work accomplished, with recommendations for strengthening and expanding these programs is found in the Annexes on Forestry, Soil Conservation and Road Stabilization (Annexes 6, 7 and 13). The ecological situation and the recommendations of the 1983 Special Evaluation are also reviewed in Annex 29, Section B.

2. Is the Forestry program having an adequate impact on reversing negative trends?

Not yet; the forestry program slowed, but did not reverse negative trends. However, forestry development is a slow process and attention was rightly given to first setting in place effective capacity and procedures. To address the Project area’s problems more effectively, the quality of Department of Forestry (DOF) staff and community workers must be further improved through training and incentives for quality performance. More attention must be given to implementing planning and monitoring procedures for all steps, including site and species selection, nursery practices, transplanting, and management. Staff turnover and late budget releases have impaired effectiveness. Greater community outreach efforts and greater involvement of women are needed. Farmer and ranger knowledge and skills should be tapped more fully.

3. Are the community forestry and soil conservation/watershed management programs solving the most critical natural resource problems?

Yes, they are beginning to. The most critical natural resource problems are restoration of degraded areas, protection of areas critical to watershed functioning (e.g., riverbelts), and improving productivity of areas with higher potential, so that demand for forest products, including fodder and fuelwood, can be met sustainably. At both Panchayat and District levels, greater care needs to be given to the interrelationship of site selection and species selection with respect to these factors. Deforestation and degradation of the hills surrounding the Dang and Deokhuri Valleys are critical problems which must be addressed at the District level. In addition to the foregoing, the Road Stabilization program is effectively addressing the problem of critically impacted areas along the road corridors.
4. Based on experience what is the necessary level of effort required to achieve adequate impact?

The crucial factor with respect to level of effort is the degree to which local human energies and capabilities contribute to afforestation and forest management. The management and technical skills of those supporting the communities' efforts and the degree to which they can draw on the ongoing experiences of community forestry programs in other districts of Nepal is critical. It is not the level, but the quality, of effort in mobilizing local community support which is critical.

That said, a six-fold increase in the levels of area planted and forest managed should be achieved over the next five years. This will, however, require much less than a six-fold increase in level of external inputs.

5. Is community-based management an appropriate and sustainable approach in long-term resource conservation efforts?

Yes, community-based management is the most appropriate and sustainable approach in long-term resource conservation for most of the Rapti zone. The greatest pressure on the resource base comes directly from communities nearest these resources. While the DOF has not succeeded in controlling community resource use, there are promising experiences in community forestry elsewhere in Nepal, and a present and growing interest in community resource management in the Zone. The recommended second-phase effort should emphasize community land-use planning and resource management encompassing, over time, Village Panchayat programs for crop, horticulture, livestock, pasture and forestry development and soil conservation. However, in the hills surrounding the Dang and Deokhuri Valleys, a District-wide DOF-managed approach makes sense.

C. Employment and Income Generation

1. What has been the impact of ATU, rural industry and educational programs on off-farm employment and income generation activities?

The impact of ATU is primarily on farm productivity and only vary secondarily on off-farm employment and income generation. Water turbines create about two jobs each, at a cost of perhaps Rs 100,000; they are worth doing more because they save the farmer time and money, than because they create jobs. A few jobs have been created by ATU in the odd machine shop, furniture factory, bakery, or for smokeless stove manufacture and distribution. However, the health and fuel-saving benefits of the chulo stove and the on-farm income benefits of improved beehives or seed bins are more significant than the few jobs involved in manufacturing or distributing them. Cottage industry programs have suffered from the usual disassociation from marketing as well as dissonance between the Cottage Industries Board and the Cottage
Industries Emporium, but some people have been employed. In the one area where figures were adduced, however, only about 27 percent of those receiving cottage industry training were using their training. While a number of handlooms and knitting machines were observed in use, the SFDP-ADB link seemed better targeted than the cottage industries program.

With respect to education, there was little indication that its provision was directly increasing employment in the depressed areas. However, functional literacy training carried out in 1982 and 1983 reached 40 to 45 thousand persons and certainly had an impact on attitudes and receptivity to change. (See Annex 19.)

2. Will new incentives in SFDP, PCRW and HPS programs increase household incomes and provide incentives for private sector development?

Yes, SFDP is increasing household incomes and assisting private sector development, the latter on a micro scale (see Sections A.2 and A.3 above and Annex 8). As Annex 11 indicates, however, PCRW is on a very small scale and HPS is too new to evaluate, in addition to being very small.

3. Should the rural industry and educational activities be phased out as planned?

Yes, although rural industry and educational activities are important, they can and should be carried out by other means than the Rapti Project. Rural cottage industry support can be provided through a new IBRD project and on-going HMG programs. Educational activities in general can be met by HMG efforts. However, local efforts/initiatives to improve local schools should continue to be supported under the proposed, on-going, local development program.

D. Infrastructure Development

1. How has the construction of selected rural roads, small rural works, and service centers contributed toward improving the delivery of basic services and promoting socioeconomic development in the zone?

The under-costed roads program (total budget of US$ 3.529 million; US contribution of $2.5 million) provided for upgrading 200 km of rural roads to truckable standard for at least eight months per year to connect Dang valley to three Hill districts. The project was able to achieve only about 25 percent of the initial target. However, the funds available were utilized efficiently and the roads provide jeepleable cum tractorable access for six to eight months per year to the Salyan and Pyuthan District capitals and half-way to the capital of Rolpa District. These roads, even in their present
Incomplete state, improve market access in the Hill areas\(^1\) and facilitate cheaper (20 percent) and more timely food imports to the food deficit Hill areas, as well as passenger movement and transportation of construction and agriculture input materials. Today, as compared to four years ago, these roads contribute much better to the delivery of basic services and promotion of socioeconomic development within the Zone. The East-West Highway, just completed, and the IDA-funded Lamahi-Ghorahi-Tulsipur feeder road are also having a tremendous socioeconomic impact on the Dang District in particular and Rapti Zone in general.

Small rural works include village drinking water systems, bridges, trail improvements, minor irrigation, village school and office building and school roofing. These activities are funded by HMG grants-in-aid as well as by the Rapti Project. The drinking water systems completed by Project serve around 35,000 people (out of a total of 160,000 people served with such systems in the Zone). They have contributed to community health and nutrition by supplying more and cleaner water, raised the standard of living of the people and saved time for women—averaging four hours per household, which can be used for other more productive purposes. The bridges and trails, where built, have contributed to market access and socioeconomic interaction within districts even though the effort has been scattered over many places at random. Minor irrigation works have helped increase agricultural production in the few areas where they have been built. The construction or improvement of school buildings and school roofing has made the environment of school children cleaner and better. It has also increased the morale and pride of the villagers, for the school also functions as a place for village social activities.

There are 26 service centers in the Zone now and the project has funded the construction of buildings for some of them. Service center offices operating from rented houses have improved the delivery of basic services in the Zone (see Annex 18). The sum of these many activities and their impacts in the zone have contributed significantly towards improving the delivery of basic services and promoting socioeconomic development in Rapti Zone.

2. Is the current transferring of responsibility of small rural works to the District level an appropriate and sustainable strategy?

Yes. Decentralization envisages bottom up planning, which has already begun to be exercised in Rapti Zone Districts. It involves the people in the planning process and the plans are expected to reflect the real needs of the people of the districts.

\(^1\)Higher rural household income has been shown to correlate strongly with favorable market access; this correlation is attributed primarily to improved access of households to farm inputs.
Decentralization also transfers a greater responsibility to the District to mobilize more local resources for the implementation of the small rural works. From the point of view of obtaining maximum peoples' participation through their mobilization, the current transfer of responsibility for small rural works to the District level is definitely an appropriate and sustainable strategy. The Evaluation Team has recommended that the Project Coordinator's Office (PCO) complete this transfer by the end of 1986 (see Annex 21). However, to improve the survey, design, construction and supervision of these rural works, the capability of the District Technical Office must be further strengthened. It is imperative that responsibility given to the DTO be accompanied by a comparable and well-defined authority also.

Institutional Development

1. Has implementation based on the coordination of sectoral activities and the use of existing agencies and organizations proved effective?

Not completely (see Main Report, Section IV and Annex 24).

In the previous two years of the project, some of the line agencies were confused about the degree of their responsibility for the Rapti Project. Several did not feel that the Project was theirs, even though the program and budget were prepared by them, and they were not fully cooperative in implementing the Project. During the planning period, all line agencies receive their Project resource forecasts (ceilings) from USAID through the PCO. They then prepare their overall plan, including Project activities, and submit it to their own ministry, department and to each District. At the national level, coordination goes through the ministry to the National Planning Commission. At the district level, budget planning and program coordination is now done in the District Panchayat itself, thus for the first time in 1984 (see Annex 22). Due to the lack of training and commitment of some line officials at the district level, the plans developed, and their implementation, have not been satisfactory yet.

Thus, to date the implementation mode of coordinated sectoral activities and the use of existing organizations and agencies have not been completely effective. However, progress has begun to be made and more is possible. The line agencies are beginning to take more responsibility for the Rapti Project due to the further progress made in decentralization (whereby the MPLD representative at the district level now has the authority to coordinate the representatives of other line agencies). The process of making this decentralization fully effective will be slow, but the progress made during the first five years of the Rapti Project provides both a platform for and reason to expect more effective District-level implementation in the future.
2. Has the Project Coordinator's Office played a key role in supporting and training district personnel and in coordinating project activities?

Yes; the PCO did play a key role in supporting and training district personnel and in coordinating project activities (see Annex 21).

3. Has technical assistance and training promoted skills development and improved professional and technical capability at the District level?

Yes; at the District level, compared to five years ago, there are many more trained technicians and skilled people, due mainly to Rapti Project activities. Training, technical assistance, technical support and technical back-up by the PCO and other agencies have been important (see Annexes 21, 22 and 23).

4. Are District offices now adequately staffed?

Not completely; the staffing situation has improved enormously since 1980, when the Project started. Many more qualified persons are filling authorized administrative and technical positions. The District Panchayat office has been considerably strengthened. However, in technical areas many non-gazetted first class posts are still vacant. Further support is needed to fill District posts with more qualified persons and--through training, work planning and organization, and project management--to increase the efficiency and effectiveness of District staff.
ANNEX 28

Cross-Cutting Development Issues
ANNEX 28

Cross-Cutting Development Issues

A. **Is the Multi-Sectoral or Integrated Area Approach the Most Effective and Sustainable Means for Promoting Development in the Rapti Zone?**

Given the current state of development in Nepal, the integrated area approach is an effective means of addressing the particular problems of the Rapti Zone. If all of the national-level line agencies and organizations had sufficient resources, the need for special area development programs would be questionable. The Rapti Zone, and many other areas of the country, are so severely disadvantaged in comparison to more favored areas that special programs are needed to help accelerate development. However, the Team found that, in the case of the Rapti Project:

- Many of the activities undertaken heretofore can and should be managed under national programs;
- Strengthening the national programs is an effective way of supporting decentralization; and
- Sustained area development efforts, in order to have real impact, must be concentrated on the key issues;
  -- Making decentralization effective in mobilizing and utilizing local human, natural, and financial resources;
  -- Increasing agricultural productivity; and
  -- Preserving and utilizing the renewable resource base upon which sustainable productivity depends.

The multi-sectoral, integrated area approach which is most effective, manageable, and sustainable is that which sharply focuses the effort, as described above and in Chapter IV of the main evaluation report. At the same time, gradual development of all national delivery services in the Zone is necessary and requires continued strengthening of the national line agencies and organizations.

B. **Does Decentralization of Government Authority as Presently Evolved Enhance Local-Level Capacity to Solve Rural Development Problems and to Formulate Adaptive Development Strategies?**

Yes. Decentralization, where it has actually begun to evolve, has enhanced local-level capacity. This capacity has been most enhanced in local development projects such as small rural works, where the responsible ministry has firmly embraced decentralization and where local communities have seen the opportunity to address local
development needs (see Section D, below). Service-providing agencies, such as the departments of agriculture, livestock, and forestry, have been somewhat less successful in enhancing local capacity. However, in the past two years, District Forestry services have begun to work with Village Panchayats to encourage local action/investment for community forests (see Annex 6). Personnel levels, in many cases, have only recently been increased and training/skill levels are low. Thin staff resources at the local level are inadequately supported from the national level, due in part to similar problems of thin resources. Service centers combining improved services from a variety of agencies are not yet operative in most areas; rather, resources from a variety of agencies tend to be scattered over many villages and not fully focused to achieve a successful integrated example to be replicated.

As noted in the Main Report (Section IV) development in the Rapti Zone is going to require Village Panchayats to give the same priority, attention, and commitment to their interrelated problems of agriculture, livestock and forestry as they now give, in many instances, to their needs for improved drinking water systems, schools, and trails. Better planned District efforts—with better-defined targets related to local circumstances, needs and potentials—must be expanded to cover a much higher proportion of the Villages of the Project area. Such District Plans need to be linked to plans developed locally by Village Panchayats, joining together development activities in land use planning, forestry, soil conservation, irrigation, pasture land improvement, fodder production, livestock, horticulture, and crop production (see Annex 28-1 for the description of an on-going training program supporting decentralization in another District of Nepal).

C. Has the Long-Term Institution-Building Approach at the Local-Level Strengthened District Capability to Plan and Manage Resources on a Sustainable Basis?

Yes, the Project achieved considerable progress through institution-building in strengthening District capacity to plan and manage resources sustainably. This was due in large part to the Project's support for increased staffing, training, and physical upgrading of facilities. This strengthened the capability of Local Development Officers, District Technical Officers, and their staffs to carry out feasibility studies for local development schemes, to do necessary design work (with some support from the Zonal Technical Support Unit), to manage the execution of district-level projects, and to help villages implement their projects. The capability to manage and account for public funds has also improved, with the assignment to each District of a Finance Controller and more accountants and bookkeepers. Improved operating facilities, increased staffing, and better-qualified staff have also strengthened line agencies in the Districts. However, much of this improvement in staff numbers and quality has taken place only recently and further strengthening is still required in training, work planning and organization, management and supervision and related areas.
D. Has the Project Assisted in Establishing Participatory Community Involvement, by People Directly and Through Assigned and Elected GON Officials?

Yes. Participatory community involvement in local development efforts has increased significantly during the past five years. The Project's support for technical assistance and materials has been more than matched with contributions of voluntary labor by communities in all five Districts. Strong leaders, including both elected officials at the Panchayat level and government agency personnel at the District level, have been able to use Project support to mobilize community participation and involvement. Particularly strong participation involving local users' groups has taken place in small rural works, such as school improvement, minor irrigation, local trails, and drinking water systems (see Annexes 14, 19, and 22). Communities have also been involved in road construction and reforestation, although participation in the planning and management of these activities is still generally limited to HMG officials.

E. Has the Project Assisted in Promoting a Broader Distribution of Resources Among the Target Population, Specifically Poor Farmers, Landless Laborers, Occupational Castes, and Women?

The Project has assisted in promoting a broader distribution of resources among target groups, but only in limited ways and often at considerable expense. Overall, the fragmented attempt to broaden the distribution of resources has detracted from attaining the very necessary project purpose of increasing the productive use of the minimal resources which do exist. The resource base is very limited and deteriorating; in most of the Project area even "elite" or well-to-do groups are very poor by other developing country standards.

The Project's widest impact has been in reforestation and road construction, which has provided millions of person-days of employment to many poor farmers, landless laborers, and members of occupational castes. Drinking water systems built through the Project serve 35,000 people of the Zone. These systems have helped women, in particular, who traditionally are the water haulers. The pilot Household Production Systems program has reached members of occupational castes, but on a very limited scale. The Production Credit for Rural Women program has reached over 900 women (although only 55 are members). The Small Farmer Development Groups include 2500 participating poor farmers in about 20 villages. The Appropriate Technology Unit and the Cropping Systems Program have reached mainly members of elite groups, who are more able and/or willing to take risks. In Dang, the Project has had no significant differential impact on the Tharu people, the vast majority of whom are landless tenant farmers and laborers.
Annex 28-1

On The Job Training for Decentralization

A. Introduction

In order to build up planning capacity at the regional, district and sub-district level, His Majesty's Government—through AFROSC, with FAO assistance and under the financial grant of Swiss Government—has launched a training program on Project Planning and Implementation (GCP/NEP/035SWI). Contemporaneously during the operation of the training activities, HMG decided to implement the decentralization program in Nepal to facilitate which, by-laws were prepared. It was decided that the projects to be incorporated in the Seventh Plan document will be prepared in line with the decentralized planning concept. However, it was also realized that unless and until such exercise can be supported with adequate procedural information and technical assistance at the field level itself, the chances of success will be meager. Accordingly, it was realized that the framework of training being conducted on Agricultural Planning and Implementation also should be modified. With a view to incorporate the newly introduced decentralized planning concept in the on-going training programs and also to cover sectors in addition to agriculture which are related to rural development, an on-the-job training program on decentralization was launched in Tanahu district.

B. Objective

The major objective behind the training program is to contribute to the success of the decentralized planning process. In order to accomplish this major objective the specific objectives followed are:

- To help prepare District Development Plans, as envisaged under the Decentralization by-laws;
- To product training materials for replication to districts besides Tanahu; and
- To design a National Training Program on decentralization.

C. Methodology

The decentralization planning process primarily focuses on the development of training materials, training activities and post training assistance. The planning process encompasses the following activities: database creation, resource estimates and allocation, and plan formulation.
1. **Data base creation**

The program has emphasized the preparation of village profiles to be used to properly direct the allocation of resources. Based on the village profiles, the Local Development Officer working at the District Panchayat Secretariat is responsible for preparing a District profile.

2. **Resource estimates and allocation**

The decentralization concept is based upon mobilization of local resources. Therefore, estimation of locally available resources as well as their effective allocation are dominant factors in planning the activities to be undertaken.

3. **Plan formulation**

The plans formulated in the villages as well as districts should reflect local needs. Depending on the type of needs addressed, activities will pass through the sectoral agencies concerned as well as Project Formulation Committees.

In the initial year of the project, there was no time to cover all training activities. Major emphasis was given to technical assistance alone. However, during the following fiscal year, several training activities, including one national seminar, were conducted. Subjects covered by the training programs for each target group are given in Table 28-1.

Activities to be covered in days to come include the training for members of the supervision committee. Most of the trainees for this training program will be the same as for the District Panchayat group. However, the contents included will primarily be the practical aspects of monitoring and evaluation.

The training program also has been providing post-training assistance. Each participant (Village Panchayat Secretaries and Sectoral Chiefs) is given a follow-up task related to the planning work he has to carry out in his job. They are also provided assistance during plan preparation work.

After completion of training and the plan preparation cycle, experience gained under this pilot training project will be shared for overall implementation of decentralized planning in other areas. In order to accomplish this, a Module for the National Training program on Decentralization will be designed before April 1986.

Quite recently, a mid-term evaluation mission was fielded to assess the progress made so far. The mission report suggests that replication of similar activities in other districts would contribute to the effective implementation of a decentralized planning process in the country.
**NEPAL: RAPTI ZONE RURAL AREA DEVELOPMENT PROJECT EVALUATION**

**Table 28-1: Subject Areas of Training Programs**

<table>
<thead>
<tr>
<th>Targeted Participants</th>
<th>Subjects</th>
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<tbody>
<tr>
<td>Village Panchayat Secretaries</td>
<td>- Preparation and use of Village Profile</td>
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<td></td>
<td>- Estimation and mobilization of local resources</td>
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<td></td>
<td>- External funding procedure</td>
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<td></td>
<td>- Concept of priority</td>
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<tr>
<td></td>
<td>- Planning formats</td>
</tr>
<tr>
<td></td>
<td>- Method of obtaining technical assistance during training</td>
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<tr>
<td>Pradhan Pancha and Upa-Pradhan Panchas</td>
<td>- Estimation of village level resources</td>
</tr>
<tr>
<td></td>
<td>- Resource generating procedure</td>
</tr>
<tr>
<td></td>
<td>- Methods of obtaining external resources</td>
</tr>
<tr>
<td></td>
<td>- Project justification and accounting</td>
</tr>
<tr>
<td></td>
<td>- Sectoral fund allocation system</td>
</tr>
<tr>
<td></td>
<td>- Decision making at the village level</td>
</tr>
<tr>
<td></td>
<td>- Methods and agencies providing technical assistance for plan preparation</td>
</tr>
<tr>
<td>District Level Sectoral Chiefs</td>
<td>- Resource allocation methods</td>
</tr>
<tr>
<td></td>
<td>- Use of village profiles in analysing projects</td>
</tr>
<tr>
<td></td>
<td>- Project formulation procedures</td>
</tr>
</tbody>
</table>
District Level

Sectoral Chiefs (contd.)

- The project formats
- Project screening criteria
- Inter-sectoral integration
- Implementation planning techniques

Sectoral Assistants

- This target group was provided the simplified inputs covered for the sectoral chiefs

District Panchayat Members/
National Panchayat Members

- Estimation and generation of district resources
- Budget analysis
- Method of obtaining external resources
- Resource allocation principles
- Project screening techniques
- Integration of sectoral plans
ANNEX 29

1983 Special Evaluation
ANNEX 29

1983 Special Evaluation Issues

A. Overview

The principal recommendation of the 1983 Special Mid-Term Evaluation (MTE) was to address issues in the five areas discussed below: the ecological situation, institutional trends, the household production systems, the incentive environment, and population. The team stated, "If conditions in the five areas of policy and program outlined are essentially the same in two years as they are now, the project should be terminated."\(^1\) The HMG felt that those "requirements for significant progress in five areas in two years time seems quite unrealistic" and were "not adequate or justified", because of the "magnitude of the problems as well as the remoteness of the area."\(^2\)

The present Evaluation Team agrees with the 1983 Special Evaluation Team's depiction of serious problems in the five areas. The demand for major program changes dealing with difficult issues (substantially and procedurally) within two years, however, appears to have been unrealistic given the extent of the changes required.

The following sections describe in detail the degree to which conditions in the five areas have changed.

B. Ecological Situation

1. Background

The MTE called for a major change in strategy, priority, and commitment to implement an approach "that will harmonize household production interests with the preservation and development of the environment. Similarly, the protection of the land with trees with ground cover should be an integral part of all development activity in the Districts. . . . The focus of development should be on the household and village self-interest and income benefit from forest, fodder and tree crops development as they now have in food production."\(^3\)


\(^2\)MTE, p. 8.

\(^3\)MTE, pp. 3, 14.
The evaluation team further specified that:

- The HMG change its decision to exclude the Community Forestry Program (CFP) management for Integrated Rural Development program areas;
- One DFO and six Community Forestry Assistants (CFAs) be assigned to each district;
- Creative use was made of the private forest and leased forest provisions of the 1981 Act; and
- Agricultural, livestock, and forestry staffs collaborate closely in forest, fodder, and fruit tree program strategies.4

The HMG responded that there was "already a commitment and priority in its national development strategy" as evident from its Sixth Five-Year Plan. The HMG further stated that only in recent years have "resources, staff, and technical knowledge to address those problems...became available," and that introducing new concepts to the local people will require continuous efforts over more than a short span of time. Finally, the HMG promised that "improvements will be made for better and more efficient implementation of these programs".5

USAID—in the project extension paper of January, 1985—pointed to the expansion of the community forest program, the establishment of nurseries and plantations, and "major policy changes" in the DOF.

2. Findings and conclusions

The present evaluation team feels that enough progress has been made to justify continue efforts in community forestry through the DOF. (See also Annexes 6, 7, 13 and 27.B.).

Although the planting of trees was not an integrated part of all development activity in the districts (a very tall order), the number of seedlings distributed per year through Panchayat nurseries did increase more than seven-fold (from 112,000 to 815,000) since 983. The number of hectares in Panchayat Forest increased more than five-fold (from 114 to 655) and the number of Panchayats participating from ten to 34. FDOs were stationed in four districts and this year the fifth district (Rolpa) will receive its own DFO. Forestry staff (gazetted and non-gazetted) increased by 20 percent, from 84 to 102. There are now 40 rangers and assistant rangers.

4MTE, p. 32.
5MTE, p. 8.
US assistance has been instrumental in helping redirect the energies of the DOF towards community forestry. A contract forestry specialist and four PCVs have assisted the Project since 1983 and four new Volunteers are now posted there. A former DOF official was hired to help secure DOF support at the central level.

The DOF is applying the management guidelines of the CFP and the DFO in Dang formerly worked within the CFP. No CFAs, however, have been hired, as the DOF feels that existing staff should begin to carry out development functions as well as traditional control functions. The majority of these staff are not yet sufficiently trained or committed to do so. USAID has only now began to realize the critical need for training at this level to help the DOF redirect its energies more effectively towards community forestry. No use has yet been made of the private and leased forest provisions of the 1981 Act. Collaboration among the agriculture, livestock, and forestry staffs is weak but there is considerable interest in increased collaboration at the District level. Community awareness and discussion of environmental problems has increased in many Panchayats. DFO staff receptivity to community forestry has improved.

3. Recommendations

The program to improve the ecological situation should proceed with more forestry and related conservation/restoration activities on an expanded scale, building on the increased capacity of the program since 1983. To maximize effectiveness, the Project should provide training in community forestry and the DOF should insist that its present ranger staff made community forestry a priority activity or be removed from their posts. The rangers must, in effect, become CFAs.

DSCWM activities must be significantly strengthened in restoration of eroded areas not presently suitable for forest production. In addition, the measures for environmental protection to mitigate the adverse impact of 200 kms of District roads cut into the Middle Hills from Tulsipur to Salyan, from Ghorahi to Pyuthan and from Chakchaka to Rolpa (Libang) should be continued and accelerated.

C. Institutional Trends

1. Background

The MTE recommended giving attention to the following institutional and program arrangements affecting the rural areas:

- The Decentralization Act should be implemented, as now envisioned, in full, giving the districts clear authority, responsibility and capability for their development programs; line agency work in support of the district programs will need to be carefully defined;
Integrated rural development strategies for the districts are not now evident. They will need to be prepared by the districts under guidelines from the central government. The focus of responsibility in the central government for planning guidelines including indicative budgets, and for reviewing district rural development strategies needs to be clarified. District budget procedures to facilitate district planning should reflect the district organization structure not the functional line agency pattern that is now followed;

Local private enterprise--individual and group endeavors in production and marketing--should be actively encouraged; and

Government manpower resources will need to be reallocated to strengthen district and village panchayat planning and administration.6

2. Decentralization Act

As noted in Annex 31, the Decentralization Act was implemented by the promulgation of required by-laws and regulations in December, 1984. In addition, HMG assigned financial controllers/treasurers to each District.

3. IRD strategies

Some progress has been made. For example, Districts included agriculture, livestock and forestry development in their annual program plan for the first time in 1984/85. Responsibilities of the Central Government to provide guidelines for District planning and for reviewing District plans were clarified in the Decentralization Act By-laws. However, District planning for food and agricultural development and for forestry and natural resource management needs to be focused much more on particular District constraints, opportunities and potentials, with clearly defined objectives and measures for monitoring progress--as noted in Section IV of the main report.

4. Local private enterprise

The Project has worked to encourage individual and group endeavors in production and marketing, but with limited results. The Evaluation Team recommends that the proposed new Project consider measures for private sector mobilization (See Section IV, Main Report).

6MTE, pp. 3, 4.
5. HMG manpower resources

There has been a marked improvement in District staffing in the past two years. Continued emphasis on filling posts, training and staff development, and improved work planning and organization by and with Districts is necessary.

D. Household Production System

1. Background

The 1983 Evaluation Team, noting that an "increase in household income is the key objective", called for strengthening "the multiple income opportunities of the household in food crops, livestock, fodder, tree crops, off-farm wages and local industry employment" through a "carefully coordinated" rural development strategy." The team also recommended that more attention be given to "identifying and carrying out alternative approaches to development."  

2. Findings and conclusions

Annex 11 describes one alternative approach--the Household Production Systems (HPS) pilot program developed in response to the MTE. This has indeed developed some creative bottom-up methodologies for reaching target population but has not addressed the central production system concerns of the 1983 evaluation.

MTE's recommendation to reshape the Project, "toward a greater concentration of resources and professional personnel time on developing and introducing a more household and environmentally-oriented development strategy" had the useful effect of accelerating efforts to address problems of forestry and natural resource management. At the same time, this recommendation had the unfortunate, and we believe unintended effect, of detracting attention from the critical need to focus on the reasons why the Project was not achieving significant impact in villages/hamlets and households in increasing food and agricultural productivity and production. The MTE clearly intended to encourage a much stronger effort to help households develop opportunities to increase income from food crops, livestock, fodder and tree crop, as well as off-farm wages and local industry employment.

7 MTE, pp. 4, 5.
8 MTE, p. 5.
3. Recommendation

The next phase of Rapti Zone development should take advantage of the improved base for development work in agriculture (including livestock) and forestry and emphasize these as the major productive components in a new Project (see main report).

E. Incentives

1. Background

The MTE observed that "Improvements in the incentive environment in prices, subsidies, markets, transportation and new local private enterprise development are essential for mobilizing economic activity in the districts. Government involvement in marketing such as in agricultural inputs should be sharply reduced. The incentive system for government officials working in rural development requires review for its adequacy and equitable application."9

The Project has thrown further light on the issue of incentives for rural development in two studies carried out in the past two years.

The first, a study of agricultural marketing and price policy,10 was based on a household income survey covering 1,000 households in the Zone. (It is hoped that HMG and USAID will preserve the basic data as branch mark material for a future survey using a compatible methodology.). The study establishes that higher household income correlates positively with favorable market access, largely due to improved access to farm inputs. It also indicates that price incentives in the Hills may be less effective than improved transportation. The study suggests that:

- Districts should program more resources for intra-District and inter-District trail improvements; and
- Districts should plan for local market organization and development.

PADCO's Rapti Zone Regional Assessment of September, 1985 made similar recommendations, as did the MTE.

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9MTE, p. 4.

2. Conclusions and Recommendations

The Evaluation Team fully supports the two above-noted recommendations. The Team also recommends:

- Strengthening the farm credit system by improving its outreach to farmers in their villages (see Annex 8); and

- Privatization of seed production/distribution of chemical fertilizers and other farm inputs (see Annex 9).

The issues of subsidies for farm inputs and of incentive prices for farm products are national in scope, requiring policy dialogue.

The design of a new project for the second phase of Rapti Zone development will, however, provide HMG and USAID the opportunity to review in depth the incentive environment for rural development in the Zone. Ways to encourage and support private sector development need further study and consideration, and should be examined in designing the proposed second-phase project.

E. Population

1. Background

The MTE observed that "Population growth rates are having an adverse effect on the social and economic situation in the Hills. Family planning programs in close association with maternal child health care require urgent attention," and recommended that health and family planning services should be intensified through other USAID projects. It also recommended giving priority to improved sanitation.

2. Conclusions and recommendations

Project activity in the area of family planning is reviewed in Annex 20.

The Evaluation Team has recommended in the main report (see Section IV.E) that USAID should adopt a broad Mission support strategy for the Project and its second phase. The Evaluation Team observed that no MCH programs were underway in the Zone and recommends that the USAID project for family planning and health services emphasize activities in the Zone in any MCH development it supports. Little has been done to promote sanitation at the community level. This should be included through support for local development by the PCO’s Technical Support Unit and the small rural works program. The Planning and Monitoring Unit of PCO should carry out a study of what can be (or is being) done under the existing Project and under a second phase.

11MTE, p. 4.
ANNEX 30

Assessment of the 1985 Mission Paper Proposing a Three-Year Project Extension
The Project extension strategy proposed by the Mission in January 1985 reshaped the Project and requested a three-year extension. AID/Washington approved a one-year extension subject to the results of the present evaluation.

In the main, the issue of whether the Project extension strategy proposed by the Mission was sound and appropriate has been overtaken by the events of this evaluation, which includes its own recommendations regarding the Project. Some brief comments regarding the Project extension strategy are, however, included here in response to the scope of work and as a preface to the recommendations set out in the main report.

The Project extension strategy was based principally upon sound findings and conclusions. In particular, it recognized the development momentum to which the Project had contributed and the importance of that momentum to a poor and remote zone of Nepal and in the context of an original development effort intended to span 15 or 20 years. The Project extension proposal is analysis also recognized the critical importance of mobilizing local resources for development purposes and the role that the Project had and could play in doing so. It also emphasized the importance of the productive sectors of the Rapti Zone and of refocusing Project resources upon these areas.

The substantive and procedural strategies designed for implementation during the proposed three-year extension were not as sound and appropriate as the above reasons for suggesting the extension. That is, the lessons learned from the Project prior to proposing the Project extension seem not to have provided enough experience to enable the (re)design of a Project that would have a reasonable chance to achieve its purposes. With the benefit of a post-evaluation viewpoint, the major areas where the lessons learned were too limited were:

- Project complexity—the proposed Project extension strategy was still too complex;
- Management—the difficult overall management task and the diffuseness of the management structure (both design flaws) were not made a central part of the redesign effort. This includes the lack of involvement by HMG agencies such as the Agriculture Ministry;
Strategy—the confirmation of the same Project strategy missed a key point of refocusing the Project, which is to shift the overall strategy of the Project sharply from that of "extensive" efforts to achieve Project purposes to that of many fewer, more intensively focused, efforts to do so;

Local development—dependence upon training and rural works to enhance local development capability and results does not go far enough. A high degree of mobilization of local private resources and activities in the areas of crop, livestock, forestry and soil conservation is essential, and the Project should facilitate it directly;

Private sector—too little emphasis was given to the lack of private sector contribution to the Project. Public sector inputs in the Rapti zone are small and should be more explicitly used to mobilize private sector initiative and contributions than suggested by the Project extension paper; and

Technology transfer—a central reason that planned Project output levels were not achieved was lack of availability and transfer of technology, but the extension strategy did not deal explicitly with why this was so and how to solve the problem.

Given these weaknesses in the lessons learned as of early 1985, the strategy proposed for the three-year extension was not completely sound or appropriate. However, it does point in the right direction, as is apparent from the recommendations for follow-on Project activity in the Rapti Zone in the main evaluation report.
ANNEX 31

HMG Institution Building for Rural Development
ANNEX 31

HMG Institution Building for Rural Development

A. Overview

Nepal's effort in rural development got underway in 1952 following the fall of the autocratic regime of the Ranas. The first such program was the Tribhuvan Village Development Program named after the Father of the Nation. Village development centers (later blocks) were set up in different parts of the country comprised of a team of technicians in different fields under a generalist called the District Officer (later Block Development Officer).

Following the inception of the Partyless Panchayat System in the country in 1962 when village and district panchayats were established, these institutions became the main vehicle for the planning and implementation of rural development programs in the country. The panchayat development worker, a grass root-level functionary trained across the board, worked with the village panchayat. Panchayat Development Officers with similar training backgrounds worked with the District Panchayat to plan and implement multi-purpose development programs.

However, with increasing manpower capability of the line ministries, the tendency to move out of the integrating umbrella of the PDO and to set up independent offices at the district level also intensified, with the result that inter-sectoral cooperation became increasingly difficult. Although attempts were made around 1965 to decentralize the government powers and functions to the District Panchayats and to make them the main forum for the administration and integration of development functions, they did not get very far because of the alleged lack of accountability of these popular bodies as well as an ingrained distaste on the part of the administrators to part with decision making powers.

In 1974, the Government made a further attempt to streamline the rural development organization by introducing what was then called the District Administration Plan. This sought to establish a unified District Office by bringing all the administrative and development functionaries under the supervisory role of the chief district offices, and to introduce a system of local level planning as a basis for sectoral allocation of resources at the national level.

However, for much the same reasons that affected the previous attempts at decentralization, as well as a lack of realization of need by sectoral ministries for local level planning, the District Administration Plan could not achieve its basic objectives.
In 1978, the Government came up with yet another attempt in this area by introducing what was called the Integrated Panchayat Development Design. This defined rural development in Nepal as being the sustained advancement of the economic and social well-being of the people on the basis of their felt needs and participation, through the development of the village and district panchayats as institutions designed to achieve such well-being. In keeping with this definition, the design also laid down six broad objectives of rural development effort. They included raising the living standard of the poorer segments of the population by increasing the productivity of the rural economy, increasing employment opportunities, and improving the level and coverage of social services in the rural areas.

The design also laid out a planning process that was based on the approach recommended by the Sixth Five Year Plan document. It was assumed that each village panchayat would develop a Five Year Plan which would be reflected in the national Five Year Plan in priority as well as in resources. It was hoped that each village panchayat plan would be aggregated into an integrated five year district development plan to constitute the basis for annual allocation of resources to the district level. To make this possible at the district level, advance information in terms of resource availability was to be provided by the center.

Since such a planning procedure required a good understanding and coordination of policies on the part of the sectoral ministries at the national level, the design also provided for the establishment of inter-ministerial coordination committees at the Cabinet level as well as at the level of permanent secretaries.

Despite these provisions, however, this design did not make much headway, primarily because of continued indifference of the line ministries and inadequate appreciation of the political imperatives of decentralized planning and allocation of resources.

Following the victory of the partyless panchayat system in the national referendum held in 1980, a separate Ministry of Local Development, now re-targeted and renamed the Ministry of Panchayat and Local Development, was created to choose between the Partyless and Multiparty political system for the country. It brings together the functions of institutional development with the regular function of planning and development at the local level. In the area of planning process, advanced local level planning starting from the village Panchayat has been kept intact.

In essence, emphasis was placed on substantive decentralization of governmental powers and functions to local popular institutions. Thus, the district panchayats became the key to planning and implementation of rural development programs in the country. Strong provision was also made for the creation of user's institutions at the local level for the planning, implementation, management and maintenance of rural
works projects. An intermediate level called the Service Center was also provided for, and which is the main staging point for the delivery of services to the villagers by different sectoral agencies.

Organizationally, the district level agencies of the line ministries were to function as a team under the leadership of a newly created functionary called Local Development Officer (LDO), a Gazetted Class II Officer of the same status as the Chief District Officer, who would act as the Coordinator of the District level development programs as well as the Secretary of the District Panchayat. In the District's resource-intensive rural development projects, an additional functionary, called the Planning and Administrative Officer, was also appointed to assist LDOs.

Due to the continuation of District Development Plan 1975 and lack of legal authority, there was still confusion in the Districts. Most of the LDOs were Gazetted III class officers temporarily acting in the II class post. Other line agencies' officers, hesitated to respect and cooperate with them. District Panchayats mainly concentrated their attention on the grant-in-aid program, which comes from the Central Government through MPLD.

On December 29, 1984 the Decentralization Act of 1982 was enforced. This Act has new features and new dimensions. However, the decentralization process in Nepal is a gradual one, one that has been a continuous process over 20 years. During these years, decentralization has been a struggle between political and administrative power. This process will be a continuous one and will require changes in the attitude and outlook of both political leaders and bureaucrats.

B. Organizational Arrangements at the District and Village Level

The implementing arms of HMG extend from headquarters in Kathmandu to the 75 Districts of the country. Depending on the particular agency or Ministry, district level officials of HMG receive guidance through a chain of command within their own agency from a variety of intermediate officials stationed at the Regional, Zonal or other administrative levels. Thus, the Regional Panchayat and Local Development Directorate, Regional Education Directorate, Zonal Commissioner's Office, and Coordinator's Office are all located above the District level but below the National level. The 21 ministries of the Central Government are not necessarily all represented at the District level, but usually all the development-related ministries are represented at that level through one or more of their subordinate "line agencies" represented in each District.

The agency officials at the district level are responsible for carrying out the regular HMG central level and district level programs or activities, plus any additional project-financed activities delegated to them.
In order to understand the totality of local operations the districts of Nepal are sub-divided into 4,051 territorial units (4,022 village panchayats and 29 town panchayats). These village and town panchayats are at the bottom of the pyramidal structure of representative government in the Nepal Panchayat System.

The term Panchayat traditionally connotes the deliberation of elders, but in the development of the modern political system in Nepal, the term has been adapted to refer to the mechanisms of using directly elected and representatively elected executive committees for reflecting the views of the people in political decision making. The preamble of the constitution of Nepal states that the Panchayat System is based on the traditional system of the life of the Nepalese people and it encourages the promotion of two basic principles: the people’s participation and the decentralization of power.

Each District has a District Panchayat (executive committee) headed by the District Panchayat chairman. The district is divided into nine subdivisions (chhetra or ilaka). Each ilaka is represented by one member on the District Panchayat, indirectly elected by an electoral college made up of all of the village assembly members from all of the village panchayats within the Ilaka division. Thus, a District Panchayat will consist of nine members representing the nine divisions plus the District chairman and the vice chairman who are elected by all of the electoral college members from the entire district. The District Panchayat also has ex-officio members drawn from the six constitutionally designated class organizations/special interest groups including the women’s organization, the youth organization (for males below 40 years of age), the adult organization (for people over 40 years), the ex-servicemen’s organization, the farmer’s organization, and the laborer’s organization. The District representative to the Rastriya Panchayat is also a member.

The District Assembly, a kind of legislative body which approves the budget and development programs for the district, meets twice a year. It consists of the District Panchayat members and the Pradhan Panchas (Chiefs of the village level panchayats) and Vice Pradhan Panchas of all village panchayats within the district.

Each village-level Panchayat, which may contain a number of villages (hamlets), has a village or town panchayat, with the executive committee headed by the Pradhan Pancha (who is elected by adult franchise). Each village-level panchayat is divided into nine wards. In each ward, a ward committee is formed consisting of five elected representatives. All are elected at large but one of them is elected specifically to be chairman of the ward committee and to serve as the ward’s representative on the village-level panchayat. This body meets frequently to carry out judiciary planning and implementation functions, including the mobilization of people for village level development activities. This village level panchayat is assigned a secretary, paid by the national government (HMG) through the Ministry
of Panchayat and Local Development. The secretary is responsible for keeping the records of the Village Panchayat including accounting records and minutes of meetings, collecting data at the village level, as well as serving as advisor and assistant to the Pradhan Pancha. He also serves a liaison function between the district and the village panchayat. The village panchayat consists of nine ward chairman, the Pradhan Pancha, the Vice Pradhan Pancha, plus ex-officio members representing the six "class organizations" mentioned above.

The Village Assembly consists of members of the Village Panchayat plus the ward committees members. The Village Assembly, like the District Assembly, meets twice a year. Its primary functions are to review the budget prepared by the Village Panchayat covering the expenditure of revenues acquired through the local fees or fines and district subsidies, including expenditures programmed for development activities within its jurisdiction.¹

¹This section is drawn in part from Rural Development in Nepal, Kathmandu, 1984.
ANNEX 32

Bibliography
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Bibliography


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