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FINAL REPORT

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List of Abbreviations

DFC	:	District Forest Controller
DOF	:	Department of Forest
DOR	:	Department of Roads
DSCWM	:	Department of Soil Conservation and Watershed Management
HMG	:	His Majesty's Government of Nepal
NFY	:	Nepal Fiscal Year
NRT	:	Natural Resource Technician
PCV	:	Peace Corps Volunteer
PF	:	Panchayat Forest
PP	:	Project Paper
PPF	:	Panchayat Protected Forest
PSC	:	Personal Services Contract
RIRDP	:	Rapti Integrated Rural Development Project
USAID	:	United States Agency for International Development

## I. Introduction:

The Rapti Integrated Rural Development Project (RIRD) initiated its project activities in August 1980. I was hired in late October 1983, under a USAID Personal Services Contract (PSC) to assist with the implementation of a community forestry and natural resource program for Rapti Zone. This report is brief summary of natural resource project activities completed, and a list of recommendations for improving community forestry and natural resource development activities in Rapti Zone.

Mr. Batuk P. Upadhyaya, Forestry Institution Consultant and I prepared a comprehensive report on natural resource development in Rapti Zone. The report was prepared last August for the Rapti Evaluation Team, and gives an in-depth discussion on the technical, socio-economic, and administrative problems of natural resource development in Rapti Zone. For a discussion of the major goals, objectives, problems, constraints, etc., one can review this report available from the Rural Development Office.

I have spent a total of two years in Rapti Zone, and when one is considering forest management and plantation establishment that is a very short time. However, a great deal has been accomplished under the forestry and soil conservation components of the Rapti Project. The concept of Community Forestry is now firmly established in the five districts of Rapti Zone. Community Forestry can work in Nepal, and Rapti Zone is a good example of what can be accomplished. The time has now come to expand and improve upon the quality of project outputs. In addition, greater emphasis should be placed on including local communities in all decisions concerning local forest management, and strengthening the supervision of all field activities.

Credit for the success of community forestry development must undoubtedly go to the Nepalese professional staff posted in Rapti Zone. I would particularly like to thank the four Rapti District Forest Controllers Mr. Ram P. Poudyal, Mr. Yam B. Thapa, Mr. Rajendra K.C., Mr. Gauri S. Timila, and Mr. Bharat P. Pudasaini, DSCWM Project-in-Charge for their hard work, dedication, and commitment to community forestry.

Special thanks to Mr. Khem Raj Nepal, Project Coordinator, and the staff of the Project Coordinator's Office (PCO) for their interest and logistical support in assisting the Department of Forest and Department of Soil Conservation and Watershed Management staff with the implementation of the forestry and soil conservation programs.

I also owe a special word of thanks to Dr. Carl A. Dutto, Mr. Benjamin A. Stoner, Dr. Jon H. Breslar, and the staff of the Rural Development Office for their support, encouragement, and advice over the past two years. I am deeply indebted for their assistance and firm commitment to community forestry and rural development in Rapti zone.

I have saved the name of Mr. Batuk P. Upadhya my friend and colleague for final special praise. Mr. Upadhya worked extremely hard over the past two years, and is the main reason why community forestry is working in Rapti Zone. He is a professional forester, and is dedicated to community forestry development in rural Nepal. His guidance, unfailing support, and interest in the Rapti forestry programs made him an invaluable member of the Rapti forestry team.

Finally, my thanks to the people of Rapti Zone. My stay in Nepal has been personally a very rewarding experience. I will never forget their kindness, generosity, but most of all friendship over the past two years. Ultimately the success of the community forestry and soil conservation programs will depend on the villagers to accept new ideas. The first phase of the Rapti project has shown some encouraging results. I am optimistic that local villagers will respond to the challenge, and community forestry development and villager participation will continue to grow in the future.

#### Background:

The goal of the Rapti Integrated Rural Development Project (367-0129) is to assist His Majesty's Government of Nepal (HMG) in improving the quality of life and income levels of the poor majority living in Rapti Zone. The project area is located in the mid-western development region, and is comprised of one administrative zone. Located in the Zone is one Inner-Terai district Dang-Deokhuri, and four hill districts, Pyuthan, Salyan, Rolpa and Rukum.

Natural resource development was included in the Rapti project, because of the critical natural resource problems, and severe environmental degradation found throughout Rapti Zone. The ever increasing population, steep mountains topography, increasing cultivation on steep slopes, over-grazing of pasture land and the destruction of existing forest has greatly accelerated soil erosion, resulting in declining living standards for the people of Rapti Zone.

The RIRD P is currently providing financial support to three HMG line agencies responsible for community forestry development and the restoration of degraded areas in Rapti Zone. The Department of Forest (DOF) is responsible for the Community Forestry Component; the Department of Soil Conservation and

Watershed Management (DSCWM) for the planning, coordination, and implementation of improved soil conservation practices; and the Department of Roads (DOR) for the protection and biological stabilization of the immediate road corridors along the more than 210 kilometers of rural roads in Rapti Zone.

Financial assistance of approximately US\$26.7 million has been provided by USAID for development in Rapti Zone. Of this amount approximately US\$2.5 million or 9 percent of the budget has been allocated for natural resource development.

### The Scope of Work

"The Natural Resource Technician (NRT) will be responsible for providing assistance to the Community Forestry, Road Stabilization, and Soil Conservation and Watershed Management components. In addition, the NRT will provide technical and some administrative support to Peace Corps Volunteers (PCV's) assigned to the community forestry program. The NRT will work out of the Project Coordinator's Office in Tulsipur, Dang. However, the NRT will work closely with the four District Forest Controllers, the DSCWM Project-in-charge, and DOR Project-in-charge. In general, the NRT will coordinate, plan, and assist with the implementation of all natural resource development activities being financed through the RIRDP."

### The Role of the Expatriate Consultant:

The role of the Natural Resources Technician has great flexibility in assisting with the implementation of RIRDP activities. However, the role of the expatriate is delicate one. The expatriate should realize that despite his trainings and good intentions there are many things that even a mildly competent DFC can do infinitely better. Being Nepali and working in rural Nepal does have significant advantages.

The role of the expatriate should, therefore, be primarily as an advisor to DOF and DSCWM staff on project implementation, and as a communicator of field problems to USAID in Kathmandu. In addition, the expatriate should search out tasks that are essential to overall project success, but often get neglected.

The expatriate should look to see where he can best fit in, and complement HMG field staff concerning overall project management. The expatriate is usually most effective working as an innovator, introducing new ideas, and demonstrating how they can best be accomplished.

### List of Achievements:

Although the RIRDP was launched in 1980, progress in the Community Forestry component lagged behind other project components. It has been only the last two years that significant progress has been achieved. Community forestry development is evident in Rapti Zone. The overall progress of the natural resource component has not matched the expectations of the Rapti Project Paper. However, a certain amount of momentum has been achieved, and there is now a base to expand natural resource activities in the Zone. In fact, the last two years completed natural resource activities exceeded the targets proposed in the Project Paper.

The Project set in place a basic infrastructure for the implementation of community forestry activities. The community forestry program is now working in 34 village panchayats, which represents only 15 percent of the total panchayats in the Zone. However, attention was placed on maintaining high work standards, and training of DOF staff in the implementation of community forestry programs.

Below is a brief summary of achievements of the DOF, DSCWM, and DOR:

#### Department of Forest

The DOF is responsible for the implementation of the Community Forestry program. Major emphasis of the component is to protect, manage, and improve the forest resource. Due to the critical shortage of forest products the DOF assists local communities in the establishment of community forests. (i.e., Panchayat Forests, Panchayat Protected Forests and Leased Forests)

The Rapti community forestry activities have been divided into field activities and infrastructure development. The main field activities include nursery establishment, forest demarcation, divisional nursery establishment, Panchayat Forest establishment, Panchayat Protected Forest establishment, National Forest plantations, seedling production and seedling distribution for private planting. Other field activities have included trainings for Nursery Supervisors, Forest Guards, and Seminars/Workshops for Pradhan Panchas participating in community forestry development.

In addition to field activities infrastructure development has received considerable inputs during the first phase of the project. These supporting activities include construction of district and range office accommodations, one four-wheel drive vehicle, four Honda motorcycles, office supplies, and forestry equipment. In general, infrastructure development has had a positive impact on field performance and staff morale.

Table 1: Field Activities for 1980 - 1985  
2037/038 - 2041/042

<u>Field Activities</u>	<u>Unit</u>	<u>Target 1980-85</u>	<u>Target Achieved</u>	<u>% Target Achieved</u>
<u>Nurseries</u>				
Fanchayat Nursery Establishment	No.	60	32	54%
Divisional Nursery Establishment		7	5	72%
Panchayat Nursery Maintenance		52	32	62%
<u>Plantations</u>				
Panchayat Forest Plantation	Ha.	935	747	80%
Panchayat Protected Forest Plantation		6900	3010	44%
Departmental Plantation		590	389	66%
Total Plantation		9425	9146	44%
<u>Demarcation</u>	Km.	1260	202	16%
<u>Tree Seedling Distribution</u>	No.	400,000	370,000	93%
<u>Nursery Foreman Training</u> 1/	No.		2	
<u>Forest Guard Training</u> 1/	No.		1	
<u>Seminars/Workshops</u> 1/	No.		3	
<u>Pradhan Pancha Observation Tour</u> 1/			1	

1/ No targets established in the feasibility study.

Department of Soil Conservation and Watershed Management

The purpose of the DSCWM component is to alleviate and check environmental degradation by treating the most critically affected sites and launching an extension and education program.

The Rapti DSCWM activities include nursery establishment, forest plantation, gully control, community water source protection and realignment, roadside plantation, and the implementation of an extension and education program. In addition, the project assisted institution building by funding the establishment and staffing of a Zonal Office in Tulsipur.

Emphasis in the DSCWM component has been on treating the most critically eroded lands, and providing protection for community water supplies. The scope of the DSCWM's activities was limited because of the serious environmental degradation. Dang District is regarded as the third most environmentally degraded district in Nepal. Nonetheless, most targets were fulfilled, and DSCWM activities were successful as site-specific demonstration areas. In future planning DSCWM project activities should be expanded and staffing levels increased. In addition, the extension and education programs should be strengthened and more emphasis placed on enlisting local participation on all essential soil conservation activities at the village level.

Table 2: Preliminary Field Activities for 1980-1985

(037/038 - 2041/042)

Field Activities	Unit	Target 1980-85	Target Achieved	% Target Achieved
<u>Establishment of Weather Station</u>	No	1	1	100
<u>Construction of Office Building &amp; Quarters (5 Buildings)</u>	No	5	3	60
<u>Land-use Plan (Dang Valley Watershed)</u>	No	1	1	100
<u>Nursery Construction</u>	No	4	4	100
<u>Forest Plantation</u>	Ha	170	170	100
<u>Watershed Treatment &amp; Plantation</u>	Ha	400	600	150
Gully Control Irrigation Canal Realignment Community Water Source Protection Roadside Stabilization				
<u>Conservation &amp; Education <sup>1/</sup></u>	No	800	1000	150

<sup>1/</sup> Trainings for farmers, pradhan panchas and village technicians.  
A total of 1000 farmers have received training in improved soil conservation practices (i.e., terrace improvement, community water source protection, etc.)

### Department of Roads Biological Stabilization

The Rapti Rural Roads Project administered under HMG Department of Roads has received considerable USAID assistance in the construction of three secondary or "feeder roads" in Rapti Zone. The three roads presently under construction are the Tulsipur-Salyan Road, Tribhuvannagar-Pyuthan Road, and the Chakchake-Rolpa Road. In January 1982, a revegetation program was initiated along the three Rapti roads to minimize the negative environmental impact caused by the construction of the roads through the hills of Nepal.

Revegetation and biological control measures were initiated in 1983/84 (NFY 2040/041) with construction of the Kumaltar Nursery. Revegetation plantation was initiated in 1984 on the Tribhuvannagar-Pyuthan and Chakchake-Rolpa road corridors. Emphasis has been placed on the planting of local indigenous species, and on facilitating natural regeneration wherever possible.

A total of 90 hectares has been planted with indigenous tree species. A few varieties of grasses have been planted for quick ground cover to stabilize road cuts. Table 3 gives a list of all plantations completed along the road corridors. In general, the seedling survival rates have exceeded 80 percent. A rate considerably higher than the Zonal average for DOF community forestry plantation.

Most of the plantations located along the road alignment are highly visible, and the village panchayats located along the road corridors have reacted favorably to the revegetation programs. In addition, the DOR's Kumaltar Nursery has distributed over 10,000 multipurpose seedlings to villagers free of cost in the vicinity of the nursery.

Table 3: Department of Roads Biological Stabilization (Ha) Plantations

Plantation Site (Ha)	Species Planted	No Seedlings Planted	% Survival
<b>1984</b>			
<b>Icchuvannagar - Pruthan Road</b> Rampur Panchayat (Harnok) (9 ha)	Pinus roxburghii, Melia Azedarach, Dendrocalamus strictus	11,900	85
Lahar Pani Panchayat (4 ha)	Pinus roxburghii, Melia Azedarach	3,700	80
Chorpani Khola (9 ha)	Dalbergia sissoo, Melia Azedarach	9,000	85
<b>1985</b>			
Rampur Panchayat (10 ha)	Pinus roxburghii, litsea Monapetala, Dendrocalamus Strictus	10,567	
Lohar Pani Panchayat (Kamire) (15 ha)	Pinus roxburghii, Albizia procera, Leucaena leucocephala	18,972	
Dharanawati Panchayat (9 ha)	Bauhinia purpurea, Dalbergia Sissoo, Albizia procera	9,622	
<b>1986</b>			
<b>Chakchake - Rolpa Road</b>			
Naya Gaun Panchayat (5 ha)	Dalbergia Sissoo, Acacia catechu	6,000	40 (Extremely degraded site)
Naya Gaun Panchayat (5 ha)	Dalbergia Sissoo, Phyllanthus emblica	5,900	35 (Extremely degraded site)
Ghotibang Panchayat (6 ha)	Dalbergia Sissoo, Acacia Catechu, Bassia butyracea	5,800	95
Ghotibang Panchayat (4 ha)	Dalbergia Sissoo, Acacia Catechu	3,500	90
Ghotibang Panchayat (3 ha)	Dalbergia Sissoo, Acacia Catechu, Acacia catechu	3,500	85
<b>1987</b>			
Ghotibang Panchayat (3 ha)	Dalbergia Sissoo, Leucaena Leucocephala, Butyracea	3,443	
Ghotibang Panchayat (Dibang) (4 ha)	Leucaena Leucocephala, Dalbergia Sissoo	4,686	
Marsiwang (Lamachaur) (7 ha)	Dalbergia Sissoo, Leucaena Leucocephala, Dendrocalamus Strictus	6,700	
Bhingri Panchayat (12 ha)	Dalbergia Sissoo, Bassia butyracea Leucaena leucocephala, Litsea monapetala	12,500	

## II. Observations and Conclusions:

In looking at the first phase 1980-1985 of the Rapti Project, project achievements in the community forestry and soil conservation components have been successful in establishing forestry programs in the five districts of Rapti Zone. This year alone targets were almost double those of the past five years, and achievement rates averaged 90 percent or more.

Community forestry activities are now being successfully carried out in 34 village panchayats. There are 40 nurseries in the Zone, about 900 hectares of plantation established, over 370,000 seedlings distributed for private planting, and 7 forest management plans written with assistance from local forest committees. In addition, Panchayat Forest and Panchayat Protected Forest lands have been handed over in greater numbers to local communities for protection and management. While still short of what is necessary, progress had been made in the handing over and writing of forest management plans.

A total of 100 DSCWM and DOF staff have received training in the implementation of community forestry activities. Training for Nursery Naikes (foremen), Forest Guards, Study Tours/Training for Pradhan Panchas, have been successfully conducted for HMG staff and individuals responsible for the implementation of forestry and soil conservation activities. In addition, over 1000 farmers have received training in improved soil conservation practices.

Although great progress has been achieved in natural resource development activities, the quality of project outputs has lagged behind. The expansion of project activities has often been at the expense of improving project quality. Survival rates for the Rapti Panchayat Forest plantations is approximately 70 percent. Considering the wide range of ecological conditions and degraded sites, 70 percent is a reasonable survival sites. However, if more attention was placed on maintaining project quality, survival rates could well exceed 80 percent. In general, the expansion of project outputs has not corresponded with the improvement of quality work in the field.

Private planting surveys have shown that more people are taking and planting more seedlings. However, the project still has not been able to meet the demand for private planting and free seedling distribution. The satisfactory production of desirable fodder trees has not been met, often resulting in a less than satisfactory response from the local communities in planting fodder and multipurpose trees on private land.

The problem of private planting and multipurpose fodder tree distribution has been a serious constraint. The answer, appears to lie in mobilizing and motivating the local people to take more responsibility in the management of Panchayat nurseries and plantations. Local forest committees should be encouraged to take increasing responsibility in nursery operations, seed collection, plantation establishment, forest protection, and forest management. To facilitate this process forest committee members should receive training in community forestry development (i.e., nursery operations, forest management, seed collection, etc.). In addition, the training of Rangers and Assistant Rangers should be expanded, especially in the writing of forest management plans. Rangers and assistant rangers are the critical link in the implementation of community forestry activities, but they have often been neglected for training. Training opportunities for Rangers and Assistant Rangers should be greatly increased.

The viability and value of Rapti Forestry and Soil Conservation programs is no longer in doubt. Nonetheless, there are still a number of constraints working against the project. Late budget releases, manpower shortages, lack of trained staff, frequent transfers, and difficulty in communication and transport are important problems working against the project. In addition, the legislative disputes concerning Panchayat Protected Forest revenue sharing, and the implementation of private forest development are serious constraints effecting local participation in the forestry and soil conservation programs. Most of these difficulties are not new, and have a long history in Nepal. Efforts at various levels have been made to solve or lessen their adverse impact, but so far, only limited progress have been achieved. Some of these problems may require sustained work at the national level, but are nevertheless urgently required.

Community forestry is no longer in its pioneering phase, but a successful national program. Emphasis should be placed on greater community involvement and participation, in order that the project may fulfill its promise---for improving the life and environment of people living in Rapti Zone.

### III. Recommendations:

- o Community forestry activities should be expanded in all five districts of Rapti Zone. The rate of expansion should be based on what is practical, considering manpower shortages, training, and village capability to assist with forestry programs.
- o Greater emphasis should be placed on extension, public education, and villagers education concerning community forestry development. Local Forest Committees should be established in Panchayats where there are PF and PPF plantations. Local Committees should be encouraged to take greater responsibility in local forest management decisions.
- o More emphasis should be placed on the propagation of multipurpose fodder tree seedlings, and distribution to farmers for private planting.
- o Monitoring and supervision of all phases of project activities should be strengthened.
- o There are presently more donor agencies involved in community forestry development in Nepal. However, there has been little formal communication between the RIRDP and other donor agencies. Coordination should be strengthened, and informal meetings initiated to exchange ideas and discuss mutual problems.
- o Private sector involvement, including private nursery establishment, leased forests, and private planting should be encouraged, and obstacles to private sector involvement removed.
- o Land degradation, deforestation, and soil erosion are critical problems in Dang Valley. A study should be conducted to expand government forest plantations. The plantation program in Dang Valley should be at least six times the current rate.
- o A system of incentives should be included for all field staff. Both officer rank and field workers should be rewarded for superior performance in the field. In-service trainings should be provided for all; and deserving individuals
- o A greater effort should be included to include women in community forestry activities and training programs.

#### Soil Conservation and Watershed Management Component:

- o Inter-agency cooperation should be strengthened through increased support and cooperation at the district and Zonal level. Inter-agency cooperation would increase project efficiency, and reduce duplication of programs.
- o Surveys of critically degraded lands should be undertaken in the five districts of Rapti Zone. Soil Conservation works should be assessed for each district, and based on the surveys a comprehensive land-use plan developed.
- o DSCWM district offices should be expanded to Salyan and Pyuthan Districts, and additional staff hired to expand soil conservation activities in all five districts of Rapti Zone.
- o Training should be provided to village leaders in soil conservation, community forestry, forest management, and pasture development.
- o DSCWM should solicit local participation in all soil conservation project activities. Technical assistance, materials and other inputs should be provided to village Panchayats in support of popular programs.

#### Road Stabilization Component:

- o The biological stabilization and revegetation should expand activities along all three road corridors. A detailed work plan should be developed for all work along the road corridor.
- o Two additional nurseries should be established in 1985/86 and in 1986/87 to permit expansion of the revegetation program.
- o A qualified Forester should be hired to assist the DOR with the revegetation program. The DOR should establish a close working relationship with DOF and DSCWM.
- o Local people should participate actively in developing appropriate land-use plans for forestry and soil conservation along the road corridors. Motivation and extension should be an integral part of the revegetation program.