

MONITORING AND EVALUATION OF THE COMMUNITY FORESTRY PROJECT IN NEPAL

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by

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LIST OF ABBREVIATIONS

CFAD	-	Community Forestry and Afforestation Division of the Department of Forests
CFA	-	Community Forestry Assistant
CFDP	-	Community Forestry Development Project
DTCP	-	UNDP Asia and Pacific Programme for Development Training and Communication planning
DFC	-	District Forest Controller, formerly called DFO, Divisional Forest Officer
Ha	-	Hectare
IDA	-	
MEU	-	Monitoring and Evaluation Unit, same as MEvU
M&E	-	Monitoring and Evaluation
PF	-	Panchayat Forest (community plantation)
PFF	-	Panchayat Forest Foreman (nursery foreman)
PFW	-	Panchayat Forest Watchers
PPF	-	Panchayat Protected Forest (existing forest)
TG	-	Technical Gazetted Officer
UNDP	-	United Nations Development Programme
#	-	Number

1. INTRODUCTION

As a system of planned feedback, monitoring and evaluation shows the seeds for its own continuing development. Rural development projects are designed to induce change. Monitoring and evaluation systems are designed not only to measure and evaluate that change but to modify the way projects effect change. Responsive and flexible project management is thus a prerequisite to the effective use of monitoring and evaluation. And since changes in project implementation necessitate changes in the methods for its monitoring and evaluation, the need for flexibility and change extends to the system of monitoring and evaluation itself.

The following case study describes the system of monitoring and evaluation designed for the Community Forestry Development Project in Nepal. At the time of writing, the system has been in operation for over three years on a project that is almost four years old. While the basic features of the system have remained intact, revisions continue to be made. Some of these revisions have come through the feedback loop described above; others have originated in outside events; but the majority of changes have come from experience in implementing the system itself. By paying particular attention to lessons underlying these changes, we hope that this case study can provide guidelines to other forestry projects where benefit to rural communities is the primary goal.

2. PROJECT BACKGROUND

The alarming depletion of Nepal's forest resources became a matter of urgent national and international concern during the late 1970s. Realization of the downstream effects of the flooding and soil erosion hastened by rapid deforestation of the Himalaya combined with a heightened consciousness of the indispensable role of forest resources in the livelihood of the overwhelmingly rural population of Nepal. This awareness helped to focus attention on ways to arrest this devastating trend. Encouraged by pilot efforts in the Chautara Forest Division in Nepal and the international initiatives in forestry for local community development (including social forestry projects in neighboring countries), Nepal decided to embark upon an ambitious programme for community forestry with the aid of the World Bank, FAO, UNDP, and various bilateral donor agencies.

The framework for a comprehensive community forestry programme was established by the passage of new regulations under the overall rubric of "Panchayat Forestry". This innovative legislation reversed many of the provisions of the previous forestry nationalization act of 1957 by providing for the establishment of two new kinds of community managed forests or woodlots. Panchayat Forest (PF) plantations can comprise a maximum of 125 hectares for each of the 4,000 Village Panchayats, which are the smallest administrative units in rural Nepal. These community woodlots would be established on (usually) bare government grazing lands with government assistance but all of the benefits going to the local community. Similarly, but more radically, existing forest blocks up to a maximum of 500 hectares in the

hills can be handed over to local panchayats with all except 25 percent of the timber sale benefits accruing to the community. These existing community forests are legally recognized as Panchayat Protected Forests (PPFs).

Based on this legal framework, the HMG/World Bank Community Forestry Development and Training Project was designed with the assistance of an UNDP/FAO preparatory project followed by FAO and World Bank missions. The community forestry development component of this project was provided with financial assistance of approximately US\$ 15 million through IDA credit and additional technical assistance by FAO through a UNDP grant of US\$ 2 million. The project officially commenced in September of 1980 and currently operates in 29 hill and mountain districts of Nepal - roughly half of the total hill districts in the country

As outlined in the World Bank and UNDP/FAO project documents, the objectives of the community forestry project are to:

- (1) Provide for the basic needs hill communities for forest resources by increasing the production of:
 - fuelwood
 - fodder
 - timber and poles
 - secondary forest products
- (2) Decrease the consumption of fuelwood through the development and distribution of improved efficiency wood fuel burning stoves;
- (3) Promote self-reliance among hill communities through their active participation in the management of their forest resources; and
- (4) Reduce environmental degradation and conserve soil and water resources.

These stated objectives and the project components established to achieve them imply a set of corollary objectives which have been identified to assist the monitoring and evaluation of the project. These include:

- to shift predominant management responsibility for community hill lands from the Forest Department to local communities,
- to change present forest product exploitation patterns by local people into ecological sound management systems,
- to change present grazing and livestock management patterns by increasing stall feeding, introducing range management and decreasing destructive grazing,
- to increase amount, intensity and usefulness of forest resource yield, and
- to change present grass regeneration patterns such as the use of fire in hazardous areas.

To carry out these objectives a new division for Community Forestry and Afforestation (CFAD) was established within the Forest Department. As depicted in Table 1, this Division is composed of six units, including the separate Monitoring and Evaluation

Unit (MEvU). In the field, the project is implemented by the regular District Forest Controllers (formerly called Divisional Forest Officers) who also have their traditional territorial duties. These DFC officers are assisted by a new cadre of forestry extension workers, called Community Forestry Assistants (CFAs). As shown in Table 2, these CFAs work at the panchayat level and are responsible for conducting field activities together with the local village committees and farmers.

The main project components and their targets as established during appraisal consist of the following:

Construction and operation of 340 panchayat nurseries and an additional 68 forest district and range nurseries;

Establishment of 11,750 hectares of Panchayat Forest plantations in these 340 panchayats;

Establishment and management of 39,100 hectares of Panchayat Protected Forests;

Distribution of 900,000 seedlings to local farmers for planting on their own land; and

Development and distribution of 15,000 improved wood-fuel burning stoves.

In support of these field activities, the project also includes prespecified targets for office and quarters construction, vehicle and horse procurement, radio transmission set procurement, and the like. Technical and administrative support to the field is provided by the CFAD. In addition, extensive motivational and educational materials and programmes have been developed as an integral part of the project extension component. Training courses are held annually at all levels to provide the new orientation towards working with and for people and the skills required to carry out these activities.

Annexes IV and V summarize the progress of the project in achieving these goals by the end of the 1982-1983 fiscal year.

TABLE 1:

Organization of Project Management as of April 1984

<u>OFFICES</u>	<u>STAFF</u>	<u>ADVISORS</u>
FOREST DEPARTMENT	Chief Conservator	Project Coordinating Committee Community Forestry Coordinating Comittee
COMMUNITY FORESTRY AND AFFORESTATION DIVISION (CFAD)	Chief, CFAD (TG Class I)	Community Forestry Technical Committee
COMMUNITY FORESTRY UNIT (CFU)	Chief, CFU (TG Class II) 1 Asstt. Officer (TG Class III) 3 Asstt. Officers (vacant)	FAO Chief Technical Adviser FAO Silviculturist/ Ecologist
STOVE IMPROVEMENT UNIT (SIU)	Chief, SIU (vacant) 2 Asstt. Officer (TG Class III) 1 Asstt. Officer (vacant)	Research Centre for Applied Science and Technology Tribhuvan University
MOTIVATION AND EDUCATION UNIT (MEU)	Chief, MEU (TG Class II) 1 Asstt. Officer (TG Class III)	DTCP Bangkok
MONITORING AND EVALUATION UNIT (MEVU)	Chief, MEVU (TG Class II) 1 Asstt. Officer (vacant) 1 Tabulator/ Computer Operator	FAO Socio-Economist
AFFORESTATION UNIT (AFU)	Chief, AFU (TG Class II) 2 Asstt. Officers (TG Class III)	
ACCOUNTS AND ADMINISTRATION UNIT	Senior Accountant (Class III) 2 Asstt. Accountants Clerks and Typists	

TABLE 2:

Organization of Field Activities as of April 1984

<u>LEVEL</u>	<u>OFFICE/STAFF</u>	<u>ASSISTANCE</u>	<u>NUMBER AT OFFICE TO PRESENT</u>	<u>TARGET FOR 1985</u>
CENTER	CFAD	National and International Professionals	10	16
DISTRICT FOREST OFFICES (1-3 Districts) Coverage	DISTRICT FOREST CONTROLLERS		21	29
RANGE NURSERY: FOREST DISTRICT AND RANGE NURSERIES	FOREST RANGERS DISTRICT AND RANGE NURSERY FOREMEN		33	36
		Volunteers/ Associate Experts	50	54
VILLAGE PANCHAYATS	COMMUNITY FORESTRY ASSISTANTS (CFAs)		14	15
		Pradhan Pancha/ Forest Committees	90	108
PANCHAYAT NURSERY	PANCHAYAT FOREST FOREMEN (PFF)		337	340
PANCHAYAT PROTECTED FOREST (PPF)	PANCHAYAT FORESTS (PFW)		337	340
PANCHAYAT FOREST (PF) PLANTATION BLOCKS	PANCHAYAT FOREST WATCHERS (PFW)		approx. 375	approx. 1000

3. NATIONAL AND INSTITUTIONAL CONTEXT FOR SYSTEM DESIGN

Systematic methods for monitoring and evaluating projects and programmes have not yet been widely implemented in Nepal. At the national level, monitoring has been confined to a system of physical progress reports based on expenditure submitted at the end of each budget trimester and at the end of each financial year. These are aggregated by sector and reviewed by individual ministries, the National Planning Commission, and the National Development Council. These reports weigh outputs according to their cost and enumerate only those targets which constitute a budgetary line item. Progress is measured in terms of the percentage of allocated budget spent. In addition to this national level system, some individual projects have initiated efforts to establish their own systems for monitoring and evaluation.

In designing the M&E system for the Community Forestry Project, we were concerned to integrate it as much as possible with the existing national monitoring system. However, it was apparent that this system is much too limited for serving project needs. On the one hand, it does not distinguish adequately between actual field activities and supporting activities. For example, since building construction and radio transmission procurement, although supporting activities, represented almost half the budget in the initial two years, the national progress monitoring system gave the project poor marks for progress when these components lagged behind even though most of the field activity targets such as planting and seedling distribution were exceeding their targets. Also, we found the system inadequate for our purposes for the more important reason that it does not take into account what happens to the outputs once the budget has been expended and the fiscal year completed. That is, it does not include even rudimentary procedures for evaluating the benefits, effects, and methods adopted by the projects. For these reasons, it was necessary to establish a separate M&E system that retained, where possible, the same categories used by the national progress reporting system, but considerably expanded its scope and methods.

The amount of expansion possible was primarily constrained by staff availability. Although the World Bank loan had made provision for hiring an average of 48 man months of enumerators annually, government regulations for hiring temporary staff did not permit us to offer salaries competitive with private research firms and made no provisions for covering the daily living expenses and hardships of field research in the roadless mountains of Nepal. In addition, the lack of permanent positions and career opportunities for social scientists and statisticians in the Forest Department hampered the possibility of hiring non-foresters with these backgrounds to serve within the M&E Unit. Aside from one UNDP financed contract for the baseline study with a private firm and a computer operator/tabulator, we were thus compelled to design a system which could be implemented with existing forestry field staff -- the Chief of the Unit and FAO advisor, and the forestry volunteers provided by various bilateral agencies. M&E costs range from 1% to 3% of total budgeted project costs depending on how technical assistance costs are apportioned.

The administrative culture within which the M&E system had to be designed and operated derives, in part, from Nepal's situation as a Least Developed Country of 16 million people with an average per capita income of less than U.S. \$140. While government jobs are sought after for their security, the monthly salary of field officers and technicians is less than \$100; the duty stations frequently require two to three days walk from seasonally served airstrips or fairweather roads; the physical conditions of life in the field are harsh; and promotion is generally perceived as having little relation to performance. As many observers have remarked, this situation has encouraged bureaucratically conservative behavior where the most successful strategy for government employees is to avoid decisions which would jeopardize their sinecure.

With the majority of the population still illiterate, Nepal also represents a predominantly oral culture in which the written medium was, until very recently, reserved for records (such as land ownership) and scriptures considered to be of a relatively permanent nature. Written communications are understood as legal documents for which the writer can be held accountable. There is thus a marked preference for dealing with problems and unresolved issues first on an oral basis, and then only recording the results after a resolution has been found. Informal and ad hoc methods of identifying problems and evaluating programs through oral communication has thus been usually the only means, aside from the budgetary national progress reports noted above, for monitoring and evaluation - a means which has been reinforced by the prevailing administrative and cultural conditions. While trying to enable as much continuing use of the oral channel of feedback as possible, the monitoring and evaluation system developed by the project has had to contend with the fact that it represents an expansion of written modes of communication and assessment which is a departure from traditional norms.

4. OBJECTIVES OF MONITORING AND EVALUATION SYSTEM

The establishment of a separate monitoring and evaluation unit within the structure of project management reflects the emphasis placed on these activities during project design. Since the nature of the project itself was so innovative for the forest department and the country, it was decided that monitoring and evaluation would be crucial to improving project management and finding out what was happening in the field.

The M&E system was thus designed with the following explicit objectives in mind.

(1) To improve project performance by:

- Providing timely information to management and implementing units on project operation and performance (inputs and outputs), with implications for support requirements;
- generating socio-economic information required for effective project implementations.
- identifying and analysing problems arising during implementation and suggesting possible solutions;
- increasing people's communication with project staff and participation in project activities.

(2) Evaluate project results and improve future planning processes through:

- measuring project effects and impacts;
- identifying and analysing factors affecting project success;
- evaluating project concepts, assumptions and models in light of actual performance and rural conditions.

5. DATA REQUIREMENTS AND INDICATORS

The data required to meet these monitoring and evaluation objectives were (and still continue to be) identified through a variety of different approaches.

(1) A formal system analysis approach was initially used to list each of the project activities in relation to the stated and implicit project objectives and identify each of the outputs, effects, and impacts logically related to these activities. The "logic" of associating various effects with different activities is based on assumed causal relationships between the project's activities and the objectives they are intended to foster. As one moves from outputs to long term impacts, the causal links become more complicated and tenuous as more and more estraneous factors impinge on the assumed causal relationships. For this reason, project effects were divided into categories of "direct effects", "indirect effects", and "long-term impacts".

Indirect effects stem directly from the project's implicit objectives. They are the result of behavioral changes induced by the project, rather than a direct outcome of specific project activities. These indirect effects merge into long term impact, which focus on an improved standard of living through the improved supply and management of forest resources within a self-sustaining ecological environment. These constitute the ultimate objectives of the project and, like indirect effects, are the expected outcome of the project as a whole rather than any one activity.

For each set of systematically identified outputs, effects, and impacts, the means and unit for measuring them were also listed. These indicators vary from those which are directly measurable (e.g. number and size of seedlings) to those which must be indirectly measured by proxy variables. The use of these proxy variables rests on assumed causal variation between the measurable indicator and the unmeasured "true value". Since the project was designed with a twenty-year time horizon, and some forestry effects and impacts can only be directly measured after thirty years of tree growing, only those indicators which can be measured within a five-year period have been identified. The further along the causal chain from outputs to impacts one moves, the more proximate, indirect, and inconclusive are the indicators that can be used for measurements.

The comprehensive list of the identified project outputs and effects together with their accompanying indicators is presented in Annex I. A few examples of each category of indicator are given below:

Outputs: project targets such as hectares planted, number of nurseries constructed, seedlings distributed, management plans drawn up, improved stoves distributed, etc.

Direct Effects: amount of grass cut from plantations, survival of seedling by species, amount of natural regeneration, degree to which improved stoves are used and estimated fuel savings, etc.

Indirect Effects: hectares under operational community management, change in grazing patterns, income to local panchayat, etc.

Long-Term Impacts: increased income through increased agricultural yields and decreased time spent on wood collection, increased environmental stability, etc.

As indicators of project success as a whole, key indicators were also identified as a kind of summary of many of the individual indicators. In aggregate form these are as follows:

- (a) Total number of trees planted and surviving in private land and community forests (PF and PPF);
- (b) Number and amount of forest area brought under adequate local management as community forests (PF and PPF);
- (c) Decreased wood fuel consumption due to increased wood use efficiencies;
- (d) Increase in knowledge and participation in community forestry activities.

While not directly relatable to specific outputs and effects, supporting inputs and activities are to various degrees indispensable components of the project. As listed in Annex I, these inputs include staff, technical assistance, vehicles, equipment, budget, etc. Indicators for the physical provision of these inputs are specified in project documents and annual budgets. However, since judgements of job performance and the efficiency with which supporting inputs are used are the responsibility of project management and outside review and evaluation teams, no specific indicators are identified for the effects of these activities aside from those associated directly with project field activities as a whole.

(2) Other considerations aside from a systematic identification of all inputs and outputs with their corresponding effects, impacts, and indicators have played an important role in determining the actual data requirements for the M&E system. The list of potentially relevant indicators listed in Annex I has been modified, focused, and curtailed in order to conform to project priorities and the constraints under which the system must function.

Data priorities have been identified by the consumers of the information and findings generated by the M&E system. These include field implementing officers (DFCs), Project Management, the Department of Forests, the Finance Ministry and Accountant General's Office, the National Planning Commission, the Rastriya Panchayat (National Legislature), and the donor agencies -- particularly the World Bank and UNDP. The identification of these priorities is a continuing interactive process. While initial data collection schedules were determined in consultation with project management and field officers prior to incorporating them in the system, feedback from other concerned agencies would appear when the issue came up: in review meeting, in supervision missions, in problem-solving, etc.

Staff and skill constraints have already been discussed as part of the context within which the system had to be designed. The most important of these constraints are: the lack of manpower specifically for M&E, the unfamiliarity with systematic data collection requirements, the reluctance to commit certain forms of communication and reporting to writing, and lack of training in sampling and surveying techniques. In different ways these constraints shaped data requirements by eliminating those indicators and variables which were too difficult to measure or too difficult to collect. While this sometimes meant eliminating indicators which were otherwise a priority for M&E consumers, it also served as a strong rationale for eliminating marginally useful information which would have only over-loaded the system, and delayed timely processing.

Data requirements thus became a function not only of what should logically be collected and measured, but also of relevance, measurability, feasibility, timeliness, and simplicity. These various considerations necessarily involved trade-offs as well as constant changes.

6. COLLECTION OF MONITORING INFORMATION: METHODS AND PROBLEMS

The distinction between monitoring and evaluation necessarily is blurred by the overlapping collection of some information for both purposes. In the system of M&E developed for the community forestry project, we have referred to monitoring information as the collection of data in regular reports which are primarily concerned with keeping track of inputs and outputs. However, these reports also serve as a vehicle for transmitting other kinds of information, including some which we would term evaluation data, and some which is operational in nature (e.g. the request for additional supplies or support from the central CFAD office).

The monitoring system is designed so that all of the necessary data can be provided by regular forestry staff involved in project activities. The District Forest Controllers are responsible for providing district level information for each of the 29 districts participating in the project. The Community Forestry Assistants and participating Rangers are entrusted with providing panchayat level information forwarded through the DFC office. Ad hoc cross checking and the development of data adjustment coefficients (where systematically biased reporting is detected) are provided by CFAD central staff through field trip reports. During the initial years, duplicated core output information is also provided by the 10-15 volunteers and Associate Experts (V/AEs) working in the field districts - both to ensure availability of information and as a means of checking its quality.

At present, a series of monitoring reports are being used in addition to the existing national trimester (thrice-yearly) and annual progress reports, described earlier, which each DFC should send to CFAD for compilation and forwarding to the Ministry and National Planning Commission. These additional monitoring forms have retained, where possible, the same overall budget headings to facilitate transfer of information from the progress reports. However, they include more detail on actual field activities to provide project management with the information they need. The forms also include several indicators and information requests which are intended primarily as planning tools to remind project staff about types of field activities they should continue to perform on a timely basis (such as extension meetings, seed collections, etc.).

Table 3 lists the various reports that make up the formal monitoring system. At different levels of specificity, each of these reports are concerned with both targeted and untargeted project activities. In the case of activities for which annual and project-period targets have been established, achievement is measured both numerically and through percentage of the target accomplished. Financial information is now (though not originally) requested from the DFC alone according to the budgetary categories and the funds allocated. Representative examples of these monitoring report formats are presented in Annex II. It should be noted that the Volunteer/Associate Expert and CFAD headquarters staff reports are virtually identical and overlap on many of the items with the regular forestry field staff.

TABLE 3: MONITORING REPORTS

REPORT	FREQUENCY	LEVEL
<u>District Forest Controller:</u>		
HMG Trimester Progress	Trimonthly	District
HMG Annual Progress	Annual	District
Annual Monitoring for CFDP	Annual	District
Trimester Monitoring for CFDP	Trimonthly	Panchayat
<u>Community Forestry Assistant/Ranger:</u>		
1st/2nd Trimester Monitoring for CFDP	Biannually	Panchayat
Annual Monitoring for CFDP	Annual	Panchayat
<u>Volunteers/Associate Experts:</u>		
Monthly Report	Monthly	District
Panchayat Specific Information	Biannually	Panchayat
Annual Monitoring Report	Annual	Dist/Panch
<u>Stove Promoters:</u>		
Stove Installation Inspection	Once only	Household
<u>CFAD Headquarters Staff:</u>		
Field Trip Report	Ad hoc	District
Panchayat Specific Information	Ad hoc	Panchayat

The data for these reports are collected in the field on the basis of information obtained from physical inventories, written records, and interviews with panchayat level workers and Forest Committee members. In the course of implementing the project, it became evident from both an operational and monitoring point of view that complete records were necessary at the panchayat level. These records were introduced in the form of printed registers and, when adequately maintained, provide almost all the information necessary for the monitoring reports. With the assistance of these records, it is estimated that the time required for collecting and completing the monitoring reports should not be more than 2 working days per year for the DFC and 3 working days per trimester (9 days per year) for the CFAs. This estimate excludes the considerable time CFAs must spend walking between panchayats as these site visits are required as part of his operational duties and no additional walking is required for M&E.

Table 4 gives a list of the registers maintained at the panchayat level that contain the information needed for the monitoring reports.

TABLE 4: LIST OF PANCHAYAT LEVEL FIELD REGISTERS

REGISTER/RECORD	RESPONSIBLE STAFF	ASSISTING STAFF
Nursery Operation Plan	CFA/Ranger	PPF
Nursery (Operations)	CFA/Ranger	PPF (foreman)
Seedling Distribution	CFA/Ranger	PPF
Plantation (and Maintenance)	CFA/Ranger	PPF + PFW
PF + PPF Management Plan	DFC/CFA	Forest Committee
Improved Stove Distribution	Stove Promoter	Installers
Stove Monitoring Form	Stove Promoter	--
Annual Target Distribution	DFC	CFA + AE/V
PF Handing Over	DFC	CFA
PPF Handing Over	DFC	CFA

The principal problem encountered in implementing the system of monitoring information collection has been the difficulty in obtaining the required information from all of the actors involved on a timely and complete basis. At the bottom of the information ladder, this difficulty stems in part from the failure to maintain all registers adequately - either because the panchayat level worker (PPFs and PFWs) are illiterate or because there has been insufficient supervision and record keeping by the CFAs. Some CFAs, in turn, have also not taken the responsibility of completing monitoring forms seriously or are still unsure of how to do so despite training sessions devoted to the subject in the annual CFA training. Also, they, like some DFCs posted to remote districts, may be absent from post and/or reluctant to commit themselves in writing to the progress that has been achieved without first hand inspection. Concern that the figures reported may also be used for auditing purposes in which discrepancies could be attributed to misuse of funds also plays a role in keeping some field staff from submitting reports on a timely basis. As noted earlier, the completion of systematic monitoring reports is not part of the traditional job description and runs counter to cautious bureaucratic norms.

The sheer physical difficulties of communication have also played an important role in the difficulties of receiving timely monitoring reports. The turn around time for mail to many of the districts is one month. If there is added to this the time it takes for a DFC to communicate with each of his CFAs who are frequently spread over the district several hard days walk away from his office (and sometimes up to four days walk away), it can be seen that communication can easily take up to two months even if everybody is at post at the time.

Despite these difficulties, the annual monitoring information at the district level has been completely collected each year within six weeks of the close of the fiscal year in time for the annual report. While panchayat level information has some gaps, that too has largely been completed over time. With the installation of the belatedly received transceiver radio sets, it is hoped that this problem will be further overcome. However, the existence of this difficulty has reinforced the wisdom of using multiple sources of information for overlapping core monitoring data.

7. EVALUATION SURVEYS AND STUDIES

The evaluation surveys used by the community forestry project take up where the monitoring reports leave off. These surveys are concerned to find out what happens after the budget has been expended and the immediate outputs produced. While some surveys are conducted only once, others are repeated on an annual basis. The immediate purpose of the regular surveys is still a kind of on-going monitoring in that they are used by project management to adjust and modify the project's implementation. However, they also serve more long term evaluation functions by examining the social and economic context and assumptions of community forestry and provide information which is currently being used to design the second phase of the World Bank funded project.

Table 5 lists the regular surveys which we have categorized as "on-going evaluation":

TABLE 5: ON-GOING EVALUATION SURVEYS

SURVEY	FREQUENCY	SURVEYERS
Plantation Survival	Annual	V/AE - CFA
Private Planting	Annual	V/AE - CFA
Improved Stove Use	Annual	Stove Promoter (+ some V/AE)

The plantation survival survey is conducted each year during the late spring in order to determine survival rates following the dry season, but after the deciduous species have regained their leaves. At present the surveys are mostly conducted by the Volunteers and Associate Experts but it is planned that this task will continue to be transferred to the CFAs - perhaps by appointing one CFA for each District to be in charge of monitoring and evaluation. An attempt is made to cover all of the plantations in each District. However, all districts do not have V/AEs to carry out this survey, and due to normally occurring volunteer and staff turn-over and illness, we have found it more reasonable to expect about 50 percent coverage in any given year.

Within each plantation a sample of between 1 000 to 2 000 pits planted with seedlings are counted. The suggested sampling method is to use at least five evenly spaced contours with a random start. Walking along each contour, one or two rows of seedling pits are then observed and recorded in a worksheet.

In addition to determining overall plantation survival, this survey seeks to determine survival rates according to species, site conditions, altitude, etc. and identify the causes for seedling mortality in descending order. These causes have been classified as primarily social (e.g. grazing, fire) or technical (e.g. size of seedling at planting, species suitability for site, planting method, insect damage, etc.). The pre-coded data collection format for this survey is reproduced in Annex III.

The only real difficulties encountered in implementing this survey have concerned determining survival by species. The lack of systematic distribution of different species within plantation areas and inadequate records regarding exactly how many of different species were originally planted or replaced has sometimes made it difficult to calculate individual species survival rates with much confidence. It is partly for this reason that plantation registers were introduced during the third year of project implementation.

The private planting survey, conducted in the late fall or early spring, is concerned with what happens to the free seedlings which have been distributed to individual households. At present it is also mainly conducted by the Volunteers and Associate Experts, but CFAs are receiving on-site training during the process.

Given the lengthy time required to walk to randomly selected households throughout the district as well as the lack of complete distribution registers for earlier years in some panchayats, a two-stage sampling procedure has been adopted. At the first stage, panchayats from each year of operation are selected according to probability proportional to size of distribution (the number of receiving households and institutions). At the second stage, seedling receivers are randomly selected from the distribution list maintained at the nursery. This procedure provides for self-weighting samples up to the district level.

The data collected in this survey include the survival rate and causes for mortality as in the plantation survey, with additional information on socio-economic variables. The household's economic status, landholdings, and ethnicity are among the independent variables measured. In addition, the survey determines who brought the seedlings, the source of initial knowledge, and the household's desires in terms of the next year (species and number of seedlings desired). The private planting survey data collection form is given in Annex III.

The main problem encountered with the implementation of this survey has been the lack of complete registers for all years at all nurseries. This has resulted in devising a fall-back sampling method in which the panchayats are first selected purposively (with larger distributing nurseries being given more emphasis for inclusion), and the seedling receivers being selected on a random basis in proportion to the size of the distribution list. Surveyors have also experienced some difficulty in the amount of walking required, particularly if no-one is at home when they arrive. However, as a partial compensation for this, many of the Volunteers and Associate Experts have reported that they learned more about local peoples's attitudes towards forestry and the program through these randomly selected visits that they did through any other of their activities.

The improved stove use surveys are conducted by stove promoters during the time when they are not busy with the supervision of distribution and installation -- usually the fall and winter. Since the majority of the stoves have been distributed in Districts accessible from CFAD headquarters by road, it has been possible to train and supervise these promoters in the survey work required. Only in a few of the districts where the promoter's level of education is inadequate or supervision from CFAD difficult, have the V/AEs taken up this responsibility.

In new and remote districts where less than 150 stoves have been distributed per year, a complete census of stove recipients is taken. In the three districts around Kathmandu - where over 2,000 stoves are being distributed this year - a simple random sample of at least 150 stove takers per year is covered by the survey. This sample is drawn from the distribution list maintained by the stove promoter and the DFC office.

Since the stove programme faces more technical and social unknowns than other project components, the resulting survey is longer and covers more aspects of improved stove use. In designing the survey, close coordination was also maintained with other projects distributing stoves such that some of their specific concerns were also added to the questionnaire. In addition to household characteristics which may be relevant to stove use (e.g. economic status, ethnicity, number of members), the survey attempts to measure degree of improved and traditional stove use for different purposes, construction or installation problems, perceptions of fuel savings, and attitudes towards various characteristics of the improved stove in comparison to the previously used cooking method. By carefully disaggregating the degree of stove use for different purposes, the survey is able to make reasonably accurate estimates of actual fuel saving and identify purposes for which the new design is inadequate. The survey's emphasis on the physical condition of the stove also has enabled the project to identify design and construction weaknesses which are fed back into research and development.

The main difficulty experienced with conducting this survey has been the weakness of using recall methods to determine the user's perceptions of fuel savings. Often the user herself is unclear about the amount she feels has been saved. While these figures are not used in calculating our estimates of fuelwood savings, it would be useful to supplement this survey with a physical measurement study of a subsample of households. A copy of the improved stove use survey questionnaire is included in Annex III.

In addition to these on-going evaluations, various other surveys have been designed and conducted for both evaluation and planning purposes. The list of these additional surveys is presented in Table 6.

TABLE 6: ADDITIONAL SURVEYS

SURVEY	FREQUENCY	SURVEYERS
<u>Benchmark Evaluation Surveys</u>		
Baseline/Socio-economic Household and Village Leader Survey	1982 & 1986?	Contracted
Training and Extension Evaluation	1983	Field Staff/ DTCP, Bangkok
<u>Investigative and Planning Surveys</u>		
Panchayat Characteristics	Each panchayat (once only)	CFA
Species Preference	Ad hoc	CFA - V/AE
Existing Forest Management	Each plan	CFA - V/AE
Private Tree and Traditional Stove Use	1981	V/AE - CFA
Phase II Project Planning	1984	DFC

The baseline/socio-economic survey conducted during the early spring of 1982 had three objectives:

- (1) To identify and analyze prevailing patterns of forest resource use, particularly fuelwood and fodder, in relation to local farming systems in different regions of the country to facilitate project implementation, midterm evaluation and future project planning;
- (2) To provide baseline data for future evaluation of project effects; and
- (3) To identify any measurable effects occurring after two years of implementation.

To meet these objectives, probability proportional to size random sampling was used to sample early participating panchayats (1979-80-), recently selected panchayats (1981-82), and control panchayats in each of the four regions in which the project operates. This gave twelve different sample groups of 75 households and 15 ward (village) leaders for a total of 900 households and 180 ward leaders. A private research firm was contracted to provide for field data collection, coding and raw data tabulation, while design and analysis remained the responsibility of the M&E Unit. It is planned that a repeat of this survey be conducted in 1986 to measure any changes that have occurred.

This socio-economic survey also served to critically examine the context and assumptions of community forestry activities in Nepal by interviewing people on their present practices and attitudes. A number of previous assumptions regarding the low level of knowledge and interest in the issues of deforestation and tree planting were found to be erroneous. Annex VI gives examples of the survey and findings, such as the large amount of tree growing already taking place in rural Nepal and the decrease in fuel consumption when prices are higher. These findings were perceived as actually strengthening the project's chances of success and were used to modify components and species selection to suit actual needs and conditions. (See Section 10)

Aside from the modest training and extension evaluation survey conducted in part by an outside UN supported institution (DTCP, Bangkok), the remainder of the surveys listed in Table 4 have been designed primarily as aids to both local and national planning. They were directed to people living in the project area regardless of whether or not they participated in the project in order to obtain a more complete picture of the existing situation with regard to such matters as private fodder tree planting and harvesting, traditional stove use, etc. As with the baseline socio-economic survey, they served as a check on overall project design assumptions. (See the Project's Field Document No. 5, Data Collection Guidelines for Monitoring and Evaluating Community Forestry Activities in Nepal, by T.N. Bhattarai and J.G. Campbell, 1984 for details on these other surveys).

8. PARTICIPATORY EVALUATION AND ADDITIONAL MONITORING AND EVALUATION METHODS

In addition to the formal written system of monitoring and evaluation outlined above, a number of more informal activities serve important M&E functions within the project. These include both semi-structured and unstructured activities which have frequently been instituted for more than just M&E purposes. The multiple roles played by these activities and their informality should not belie their importance to the monitoring and evaluation system and the effectiveness of the project as a whole. Many of them are established as part of the regular management information system even though they also serve a M&E function.

The most structured form of participatory evaluation takes place in the annual District Seminars. These three-day seminars are organized by the DFC with support from CFAD. The elected Panchayat leaders (Pradhan Panchas) and the Forest Committee Chairmen of each participating panchayat are the principal participants. Leaders of the elected district Panchayat and appropriate district officers (such as the chief District Officer, Local Development Officer) and other representatives (such as the local chairwoman of the Woman's Organization) are also invited to participate in the seminar.

The main purposes of these district seminars are to acquaint participants with details of the program, identify and discuss problems and successes from the perspective of village leaders, and provide additional motivation for active participation. Each seminar includes a one-day field trip to a nearby panchayat arranged by that panchayat's leaders and forest committee to see and discuss activities in the field as well as educational activities such as the showing of film strips and films. At the conclusion of each seminar the panchayat leaders draw up a list of problems and recommended solutions which are passed by the seminar as a whole and forwarded to CFAD headquarters.

Less structured, but equally important forms of participatory evaluation take place during CFAs and DFCs meeting with villagers - both in the village and at the DFC's district office when village leaders visit the district center for various reasons during the year. These are supplemented by frequent field trips made by CFAD headquarters staff to project panchayats in each district in which staff discuss the programme directly with the local people. Although some of the results of these informal meetings may be communicated in writing through field trip reports or letters, most of them are passed on to project managers through staff meetings and discussions. Like district meetings, these discussions provide important information for M&E which would not be forthcoming through written reports and surveys, as well as serving a management function.

Internal project staff evaluation (a kind of self-evaluation) takes a variety of more or less informal forms. On the more structured side, are a series of annual meetings in which all aspects of the programme are discussed at the same time as any new dimensions may be introduced by CFAD headquarters. These meetings include: the Annual DFC and V/AE Meeting held each fall at headquarters, the Annual Regional DFC and V/AE Meetings at regional centers, the Annual V/AE Meetings at headquarters in the spring, the Annual CFA Training Courses in the summer, and regular district and CFAD staff meetings.

In addition to these meetings, each volunteer and associate expert completes a District Report at the end of his or her two year term. This report is reproduced as a project document and covers all aspects of the project, including the V/AE's personal evaluation of achievements and problems in their assigned districts.

The M&E Unit also conducts a kind of on-going evaluation of processes, problems, and issues which have been identified through the M&E system. This evaluation usually involves short term field research in participating panchayats using qualitative data collection techniques, including interviewing representative villagers and staff and observation of behaviour. Frequently, some research into secondary written materials (such as reports on livestock feed requirements, legal texts, etc.) is also involved in investigating particular issues relevant to the project. These methods are also being used for initial preparation of the project's second phase. While the M&E Unit has considered supplementing this aspect of project evaluation with in-depth case studies, so far the unavailability of funds or staff to carry out these studies has precluded their use.

Outside Evaluation of the project is conducted by the various funding bodies, including HMG, UNDP, World Bank, and FAO. In addition to regular World Bank supervision missions and HMG/UNDP/FAO tripartite reviews, the most significant outside evaluation was the Mid-Term Review of project activities conducted by a joint team with members representing each of these agencies. The results of these evaluations are circulated in the form of reports, discussed in meetings, and the recommendations are incorporated in on-going project modification and implementation. The functioning and usefulness of the M&E system itself has been regularly reviewed through this means. These outside evaluations thus serve to provide a valuable independent perspective which is particularly necessary when M&E is part of the management structure.

9. DATA PROCESSING AND ANALYSIS

Data processing and analysis has been conducted entirely by the three staff associated with the M&E Unit; that is, the Nepalese Senior Class II Forestry Officer, the FAO socio-economic advisor, and the Nepalese computer operator/tabulator. Given this limited manpower, and the other demands on our time, we have had to develop relatively efficient systems for data processing and analysis, which rely heavily on the use of a small microcomputer (Apple II Plus with 64k RAM and two floppy disk drives and printers).

Hand tabulation with a calculator continues to be used for aggregating the regular HMG trimesterly progress reports required by the National Planning Commission. This is accomplished by assembling all of the reports received from the DFCs and transferring them in aggregate form to the special Nepali language format required. However, following the completion of the annual compilation, the budget figures are entered into a computer software program for financial spreadsheets (Visicalc) for double checking the figures and producing an English language summary.

Monitoring report data on project outputs is maintained in both written, graphic and electronic media forms. As data are received from the field through monthly, trimesterly, and annual monitoring reports, details regarding the targets achieved are recorded in a set of registers maintained by the Unit Chief and then passed on to the computer operator for filing until the time for the annual report is due. The location of participating panchayats and nurseries constructed is recorded on a large scale wall map using colored pins to represent different types of nurseries and years of construction. At the end of the fiscal year, targets and achievements are entered into the financial spreadsheet computer program for printing and calculating various totals and ratios of achievement (See Annex IV). From this software programme, the data are also transferred to a graphing programme (Visiplot), which outputs various types of graphs to illustrate progress. (See Annex V).

The greatest benefit from using the microcomputer has been in the processing and analysis of the annual on-going evaluation surveys, baseline survey, and other one-time surveys. Data entry and simple tabulation which would otherwise take three to four man months of hand tabulation for each of the on-going evaluation surveys (typically consisting of 300 to 500 survey forms with 30 to 60 variables each) can now be accomplished by the single computer operator/tabulator in one to two weeks with considerably greater accuracy. Part of this efficiency was gained by our learning to develop pre-coded survey forms designed for direct entry via the computer keyboard, thus eliminating the intermediate step of hand tabulation.

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The use of statistical software programmes for computer analysis of the survey data has made possible a much more rapid and sophisticated level of understanding of the data obtained. At the simplest level, a custom package called Statistical Data Processing, permits two way cross-tabulation of variables to produce pre-formatted tables with percentage, mean and chi-square values. An example of such a table dealing with survival percentages of plantations is presented in Annex IV. Using a much more comprehensive commercial software package entitled Statistical Processing System, a large number of statistical tests can be interactively performed. This package has been heavily used for multiple linear regression analysis to determine the relative influence of various independent variables on a single dependent variable. One of the most useful applications of this method has been to estimate the relative contribution of different causes for seedling mortality in which it was found that technical reasons were primarily responsible for low plantation survival rates in Panchayat Forests. Another application identified a very high correlation between number of seedlings taken by a household and its ownership of irrigated land, even though most seedlings are planted on the unirrigated upland areas.

Even if a general statistical programme were available on the recently installed large national computer, it is evident that the increase in cost, loss of flexibility, and competition for time that use of this system would entail, would far outweigh the advantages achieved by the project's having its own microcomputer system for data processing and analysis. The total cost of this system including software, supplies, and repairs over the three years of its operation has been, roughly US\$ 7 500.

10. PRESENTATION AND USE OF FINDINGS

The information and findings generated by the monitoring and evaluation system are communicated to project management, field staff, and other interested parties through a variety of formal and informal means. These include both written and oral methods of communication that are made possible by the inclusion of the monitoring and evaluation unit within the structure of project management. Project management, in turn, incorporates the major findings of M&E in their reports to Government and donor agencies.

Written reports, which include graphic presentation of findings generated by the computer, include the following:

- Annual Progress Report: a summary of project progress and achievements, evaluation findings, and outstanding problems identified under three headings: technical, socio-economic, and administrative.
- Separate reports covering on-going evaluation surveys, the baseline/socio-economic survey, and other surveys where analysis of the data are given more detailed treatment than in the Annual Progress Report.
- Internal circulation of V/AE monthly reports, field trip reports, and other relevant reports received from the field CFAs and DFCs.
- Project Newsletter: a summary of M&E findings are presented in a separate section devoted to this purpose in the project's newsletter which appears approximately four

- Seminar and workshop papers: results presented in some of the reports are rewritten for wider audiences when CFAD staff participate in national and international seminars and workshops.
- Radio program: when appropriate, some results are broadcast in the weekly national radio programme supported by the project.

Of equal, if not more, importance to effective use of monitoring and evaluation information is the M&E's direct participation in project implementation. This participation provides numerous opportunities to feed M&E information directly back to project management and the other units of CFAD at the time when decisions are actually being taken. The forums for this participation include:

- Weekly staff meetings in which issues and problems currently facing the project are discussed with project management.
- Annual Meetings with DFGs and V/AEs discussed earlier.
- Annual training courses for CFAs which are held under the auspices of the Ministry of Forest and Soil Conservation's Training Wing with most of the lectures given by CFAD staff.
- Preparation of annual work plans and budgets in which all of CFAD units are involved.
- Collaboration with other units in their various operational and support work.
- Participation in supervision missions and the mid-term review of the project conducted by the World Bank, UNDP, HMG Nepal, and FAO.

During the three years the M&E system has been operational, it has been gratifying to observe that the information and findings of the M&E system have been used continuously by project management and implementers, national level policy makers, auditors and legislators, as well as donor agencies, to effect a number of specific changes in the project's annual targets, motivation and education activities, field procedures, and legal and administrative support. While it is likely that some of the problems these changes address would have become apparent to some extent even without the system, monitoring and evaluation data provided the basis for documenting and quantifying the importance of specific problems and uncovered others which might not have been noticed. Without in any way attempting to be exhaustive, examples of some of the specific findings and corrective actions taken are given below.

M&E Finding: Annual targets for private planting set during appraisal were considerably exceeded in the field. Source: annual monitoring reports.

Corrective Action: The target and budget for distribution of seedlings was greatly expanded.

M&E Finding: While targets for PF planting were being exceeded, those for PPF enrichment planting were not met and in the opinion of field workers often not necessary.

Source: Annual monitoring reports and annual meetings.

Correlative Action: The target and budget for PF and PPF plantation were amalgamated into one to allow for more of the former and less of the latter in those districts with larger areas available for PF planting.

M&E Finding: The demand and rate of use of improved stoves was high, but early models suffered from cracks particularly on the front lip and the inability to accommodate varying size cooking pots, as well as inadequate maintenance. Source: stove use survey.

Corrective Action: The rapid expansion of the programme was continued but the number of districts covered was limited. The stove was redesigned to strengthen the front lip and improve installation. A layer of mud was added to the top of the stove to increase strength and fit a larger array of pots. A wall chart and illustrations in the distribution register were developed to show proper installation and maintenance methods.

M&E Finding: Knowledge of the availability of free tree seedlings among average villagers was confined to only half the panchayat's population after two years of operation. Source: socio-economic household survey.

Corrective Action: A signboard was designed to highlight the availability of free seedlings to all. An intensive radio campaign was launched during planting season and large numbers of wall posters were distributed to increase awareness.

M&E Finding: Knowledge of the provisions regarding the community's ownership of forest resources in PFs and PPFs was low after two years into the project. Source: socio-economic household survey.

Corrective Action: Additional publicity materials explaining these provisions were developed and CFAs trained to use them. It was decided to encourage the organization of Forest Committees in each panchayat and among smaller user groups where necessary.

M&E Finding: Many nurseries were not meeting the private demand for the most desirable fodder species due to the cost and difficulty in seed collection. Sources: participatory evaluation, field visits, annual meetings, socio-economic household survey, monitoring reports.

Corrective Action: A separate budget line item for collection of fodder tree seeds from private farmers was established for each district. An annual calendar with a reminder of which species are to be collected and sown that month was designed and distributed to all field staff, nursery foremen, and forest committee chairmen.

M&E Finding: Most of the mortality of seedlings planted privately was due to lack of sufficient knowledge in planting techniques and seedling care. Source: private planting survey.

Corrective Action: A special extension pamphlet on planting methods was prepared and distributed to seedling takers. Graphic illustrations of these methods are included in the new distribution registers. Nursery foremen were given additional training in the importance of this subject.

M&E Finding: The most significant cause of mortality in PF plantations was the small size of seedlings at the time of plantation. Source: plantation survival survey.

Corrective Action: A nursery operation planning document was devised and training given to CFAs in its use to improve operations. A national effort has been mounted to remove the hurdles which resulted in delayed release of the budget so that operations can be started in time in the fall.

M&E Finding: Among the exotic species tried in field locations, *Pinus patula* shows high survival rates at between 1,500 and 2,000 meters, but the Eucalyptus, Robina, and Lucenae species tried have very low survival in most conditions where they were planted. Source: plantation survival survey.

Corrective Action: *Pinus patula* seeds were continued to be supplied for planting at this altitude, but the amount of seeds of the other species was curtailed and confined to certain districts.

M&E Finding: The preparation of PF and PPF management plans has been very slow. Source: monitoring reports.

Corrective Action: Targets for plan preparation have been included in the annual district work plans and budgets.

As this partial list illustrates, there has been a positive response to monitoring and evaluation from project management and policy makers. Where resistance has been encountered to the system, it has stemmed from some of the field staff who have been reluctant to file reports - as discussed earlier. In addition, while not constituting resistance to M&E itself, there have been some problems and recommendations with national level policy implications which have yet to be fully addressed by the decision-makers. Some examples of unresolved problems remaining after their detection by M&E and project management are included

- The rate of PF and PPF handing over continues to lag significantly behind target
- Explicit legal provisions for handing over PFs and PPFs to management groups smaller than the panchayat (such as wards and villages) have yet to be made and approved.
- Workable legal provisions and procedures for panchayats to receive their share of the proceeds from timber sales out of PPFs have yet to be established.
- The legal basis for awarding PFs to town panchayats have yet to be enacted.
- Despite considerable efforts, the problems caused by the late release of the budget and frequent transfer of staff have yet to be resolved.

11. CHANGES MADE IN M&E SYSTEM AND OUTSTANDING ISSUES

Although the overall system of monitoring and evaluation has remained basically the same during its three years of operations, a number of changes continue to be made. These changes stem from three sources: changes in external conditions, changes in project implementation, and experience gained through implementing the M&E system itself. As noted in

the introduction, a good M&E system should foster the kind of project changes which in turn will require modifications to be made in the means for monitoring and evaluating the project.

At various times during the last three years, a number of changes in external conditions have necessitated modifications in monitoring data formats. These have included national level changes from a quarterly to four-monthly (trimester) budgetary system; national changes from centralized disbursement and accounting to district treasuries; Forestry Departmental territorial organization changes from Circles and Divisions to Development Regions and Districts respectively; and local political and administrative changes in the numbers and boundaries of individual panchayats. These changes have also called for revisions in the sampling frames of the on-going evaluation surveys.

Internal project changes such as those enumerated in Section 10, have also necessitated changes in reporting formats. The addition of new budgetary targets has, for example, required adding categories for reporting progress on these items. Similarly, increased emphasis on preparing management plans for PPFs has required both that the number and hectares of PPF under management be reported and that the formation and activities of local Forest Committees be monitored.

Changes based on our own experience in implementing the M&E system as well as the experience of project management have perhaps been the most important. Some surveys, such as the initial private tree ownership and use survey and the traditional stove use survey, were dropped or assimilated into other surveys once their initial exploratory function was served. The collection of some data from the CFA level such as man and woman days of employment were dropped once it was realized that they were perceived as an auditing function and thus served to discourage completion of the form for fear of accounting discrepancies. (This particular problem also led to under-reporting of female employment since daily wage rates for women are lower than for men.) However, as donor agencies and auditors pressed for more financial information, budgetary figures for field activities were added to the DFC district reporting format while limiting the number of additional reports required from him to one annual summary.

Experience with data processing and file handling also led us to a number of format changes which would make these processes more efficient and accurate. These included developing pre-coded questionnaires with data analysis variable names and numbers included in the forms; standardizing the size of all forms to regular sized paper; and developing sets of instructions for each of the surveys to be conducted. Continued field testing also led us to change the wording and order of questions so that they would yield more reliable and valid data.

At this point in the M&E's system development, there remain a number of outstanding issues which may well require additional changes in the future.

One of the most important of these issues concerns the question of financial monitoring. Initially, no financial monitoring was conducted aside from the accounts maintained by the CFAD accountants. However, as various consumers of monitoring information such as the World Bank and the Accountant General's Office of the Finance Ministry began to request more information on the cost of specific activities, annual budgetary information has now been included in the DFC district monitoring report. Should this be further expanded to include trimester accounts and overall project accounts? If so, is not the M&E system likely to get side-tracked into an accounting and auditing function which could also effect the willingness of field officers to cooperate with the system unless they are made directly accountable to the Chief of CFAD for their performance? And is such an integration

system, possibly by computerizing it? But can such a change in the accounting system be accomplished without the whole government's accounting system being changed? As these questions indicate, the issue of financial monitoring is beset by a number of questions which have so far made us reluctant to incorporate additional financial monitoring within the system.

The question of financial monitoring is closely related to the question of the linkage between this project specific M&E system and wider department, ministry, or national level monitoring and evaluation. At the moment, no such wider level system exists beyond the National Planning Commission progress reports described earlier. However, community forestry activities occur in other donor funded projects, including integrated rural development projects and soil and watershed conservation projects. At least at the Departmental level, if not higher, it would appear desirable to have a single monitoring and on-going evaluation system that would allow results to be easily aggregated and compared. To this end, we have produced documents which spell out the community forestry project's system and data collection guidelines and formats. However, until a branch of the Forest Department is established to deal with this issue, it is doubtful that a generalized system will be adopted except on an ad hoc project basis.

As discussed earlier, systematic and timely receipt of monitoring information from all field officers remains a problem in the implementation of the system. In our opinion, there are only two immediate solutions to whatever remains of this problem once the transceiver radio sets are installed. On the one hand, there is a need for the job descriptions of DFCs and CFAs to contain explicit reference to their responsibility for monitoring and regular reporting. This responsibility then needs to be enforced by the Office of the Chief Conservator. On the other hand, given the low salaries paid to HMG employees and the additional work entailed by project monitoring, the possibility of providing financial incentives for special monitoring reports could also be considered. Since this latter suggestions somewhat vitiates the first, however, we would be more pleased to see the first implemented along with a significant overall increase in regular salaries.

The present on-going evaluation system is high level of dependence on Volunteers and Associate Expert is a related issue which is still outstanding. To the extent that this has been a function of the CFAs initial heavy nursery construction workload and their lack of training in sampling and surveying, it should now be increasingly possible to enlist CFAs in this task. But to the extent that these specialized skills cannot be taught to all CFAs and because of the need for objective outsiders to conduct these evaluations, it may not be possible or desirable to transfer all of these tasks to the CFAs in the existing structure. For this reason, we are of the opinion that it would be useful to assign one additional CFA who has the talent and interest in each district to take full time responsibility for on-going project evaluation with additional incentives. Alternatively, a private research consulting firm with personnel trained in forestry could be awarded a contract to conduct these surveys - thereby circumventing the financial constraints which prevent the M&E Unit from hiring qualified surveyors to conduct this work. As a final possibility, a number of CFAs could be assigned to the M&E Unit, but this would require creating new positions through a process which is likely to last several years.

The transfer of the present Chief of the M&E Unit together with the completion of the FAO advisor's assignment also poses a potential question as to the sustainability and continuing development of the M&E system. To some extent this issue has been dealt with by attempting to document the working of the present system as fully as possible and train field staff in its implementation. In addition, a fellowship has been established to provide Master's degree training in the social science skills required by a young forestry officer

who would be expected to take up the work upon his return. Nonetheless it remains true that monitoring and evaluation is not considered a mainstream career activity for a forester and there is no position established or real career possibilities that would enable recruiting a social scientist for this job. Ultimately, therefore, the fate of the system will depend on the level of interest and orientation of the forestry officer assigned to this task in the future and the relative importance project management gives to M&E.

On a more theoretical level, the extent of coverage of the M&E system is also an outstanding issue. In an effort to keep the system sufficiently simple to be workable and useful, some effects and impacts have not been examined directly and systematically. To what extent should the project try and monitor what happens to forest within the panchayat which are not handed over as PPFs? To what extent should the system try and measure the change in time used for fuel collection, hand harvesting of grass, and use of improved stoves brought about by project activities? To what extent should the social factors involved in community forestry decision-making be studied and documented? We consider all of these questions, and others like them, important. While constraints of manpower and funding have precluded addressing them for the present, it may be that some of them should be taken up as special case studies in the future.

12. ADDITIONAL ROLES PLAYED BY THE M&E SYSTEM

A discussion of the community forestry project's monitoring and evaluation system would not be complete without noting some of the additional roles played by the implementation of the system. Just as other project components have their separate effects, the activity of monitoring and evaluation itself has had some effects beyond those specified as the system's objectives.

By having the regular project forestry staff be responsible for project monitoring at various levels, the M&E system has encouraged more attention to work planning. The requirement for CFAs to submit periodic reports on their accomplishments in each of the activity categories, is a reminder of their job responsibilities which forces them to focus on all of their assigned duties. This side effect of the system has been deliberately increased by including some monitoring questions which are intended more to ensure proper work planning than provide data for tabulation. The submission of these reports through the DFC also helps to ensure that the systematically focuses on the various work components of the project on a regular basis.

Similarly, to the extent that CFAs participate in on-going evaluation surveys they increase their extension activities. Each time a survey is conducted, more households are contacted. To explain the survey to household members, the programme must also be described to some extent. The use of random sampling techniques has the beneficial effect of ensuring that the whole spectrum of villagers become involved in this interaction and poor, out of the way households are also visited.

The collection and dissemination of the findings of monitoring and evaluation also appears to serve as a performance incentive for field staff. Preparation and submission of monitoring reports provokes a certain amount of self-evaluation which might not otherwise take place. Presentation of M&E findings are necessarily comparative, graphically pointing up districts with high achievement and survival rates review by both superiors

and peers seems to promote a degree of healthy competition and a desire to achieve reasonably good results.

Finally, at the national level, M&E information has been used to garner additional political support for the programme and answer inappropriate criticism. By documenting results, the M&E system provides answers to questions which might otherwise remain in the realm of quick impressions and opinions. For example, when doubts have been raised in the Rastriya Panchayat (national legislature) regarding the survival of plantations based on exposure to one poorly surviving plot, it has been possible for the officials to produce statistically reliable data providing a reasonable degree of survival in Nepalese mountain conditions.

While these additional roles are not the primary purpose for implementing a comprehensive, effective M&E system, they do provide positive side benefits to project implementation which should not be ignored in evaluating its usefulness.

INDICATORS FOR OUTPUTS AND DIRECT EFFECTS

FIELD ACTIVITIES	OUTPUT INDICATORS	DIRECT EFFECTS	EFFECT INDICATORS
NURSERY ESTABLISHMENT (TARGET - 340)			
Division Nursery (Target - 17)	# constructed # operational # seedlings produced # seedlings planted/ distributed	Increased employment Provide water	MD/employment/sex # households served
Range Nursery (Target - 51)	# constructed # operational # seedlings produced # seedlings planted/ distributed		
Panchayat Nursery (Target - 680) (2 x 340 Panchayats)	# constructed # operational # seedlings planted/ distributed		
PF ESTABLISHMENT (TARGET - 11, 750 HA, 340 PANCHAYATS)			
Selection Awarded	# selected # awarded Ha estimated area	Increased fuelwood Increased leaf fodder Increased grass	% survival/Ha /species % survival/Ha /species Kg grass cut/Ha
Demarcation	Km demarcated Ha demarcated	Increased timber/pole Increased secondary forest products	% survival/Ha /species % survival/Ha /species
Plantation Protection and maintenance	Ha planted Ha maintained % survived/Ha # PFW hired	Increased employment Decreased grazing land Decreased labor time	MD/employment/sex Ha decreased % survival/Ha /species
Making Plans	# plans prepared # plans operating		
PPF ESTABLISHMENT (TARGET - 39, 100 HA, 340 PANCHAYATS)			
Selection Awarded	# selected # awarded Ha estimated area	Increased fuelwood Increased leaf fodder Increased grass	Kg collected/Ha Kg collected/Ha Quantity used
Demarcation	Km demarcated Ha demarcated	Increased timber/pole Increased secondary forest products	% survival/Ha /species % survival/Ha /species
Plantation Protection and maintenance	Ha planted Ha maintained % survived/Ha # PFW hired # plans prepared # plans operating	Increased employment Decreased grazing land Decreased labor time	MD/employment/sex Ha decreased % survival/Ha /species

OUTPUT INDICATORS (cont'd)

FIELD ACTIVITIES	OUTPUT INDICATORS	DIRECT EFFECTS	EFFECT INDICATORS
PRIVATE PLANTING (TARGET - 900 000 SEEDLINGS)			
Distribute Seedlings Seedling Care	# seedlings distributed # persons received % surviving	Increased fuelwood Increased leaf fodder Increased timber/pole Increased secondary forest products	# survival/species # survival/species # survival/species # survival/species
STOVE IMPROVEMENT (TARGET - 15 000 STOVES)			
Distribute Models Increased local adoption	# distributed # in daily use # adopted	Decreased wood consumption Decreased labor time Increased stove cost	Kg decreased Hr./P.C./day decrease Rs. increased
SOIL CONSERVATION			
Plant Protection Infrastructure Protection	# areas protected # areas protected	Decreased erosion	# areas stabilized
LOCAL TRAINING			
PFF and PFW Training	# PFF trained # PFW trained	Increased effectiveness Increased demand	% survival increased % awareness increased
MOTIVATION AND EDUCATION			
Seminars/Workshop Distribution Materials Extension Sessions Signboard Established Study Tours Schools Involved Radio Programmes	# held # persons involved # materials distributed # sessions held # males involved # in place # study tours # persons involved # schools involved # programmes aired	Increased knowledge Increased effectiveness	Amount increased Demand increased % awareness increased % survival higher

INDIRECT EFFECTS AND INDICATORSOverall Indirect Effects

Increased community management
or forest land resources

Change in local forest product
harvesting pattern

Change in livestock grazing and
feeding patterns

Change in use of fire in
hazardous forest areas

Increase in panchayat income
from forestry

Increased soil and water
conservation

Farm member time allocation
changed

Possible Indicators

- Hectares managed by Panchayat through operational working plans
- Man days of labor contributed by community to FDP activities
- Number of PPF watchers to local community
- Distribution of costs to various segments of community
- Number of management plans being implemented
- Percentage feed from stall feeding
- Annual number of grazing days per livestock changed
- Usable Kgs manure per capita changed
- Hectares burned per year
- Rupees per year increased
- Hectares with increased ground and crown cover
- Number of gulleys protected
- Hectares of decreased grazing
- Hours per capita per day spend on fuelwood, fodder, and timber collection changed

IMPACTS AND INDICATORSLong Term ImpactsPossible Indicators

Self-sustaining ecologically sound man-forest relationships established

- Natural resource exploitation in balance with regeneration

Increased agricultural productivity

- Increased yield per hectare through increased manure per hectare

Increased livestock productivity

- Increased income from livestock products

INPUTS INDICATORSInputs and ActivitiesIndicators

Forestry staff: CFAD and Forest Divisions

- Positions filled by category
- Performance

Funds (budget)

- Money allocated and spent by quarter

Technical Assistance

- Position filled
- Performance

Buildings and land purchase

- Unit by category

Vehicles

- Functional units by category

Radio Equipment

- Functional units by category

Provenance Trials

- Number of plots

Office Equipment and Supplies

- Budget expended

ANNEX II

DISTRICT:

FISCAL YEAR

DFC ANNUAL REPORT FOR CFDP MONITORING
PART I - SUPPORTING ACTIVITIES

DFC:

DATE:

	Rs.	Rs.	Rs.	Rs.	
CFDP Budget Only Budget Head	Annual Allocation	Amount Released	Actual* Expendi- ture	Amount Advanced	Remarks
(1) Salary					
(2) Allowances					
(3) TA/DA					
(4) 4.1 Services & Utilities					
4.2 Other Services					
(5) Rent					
(6) Maintenance					
(7) 7.1 Office Goods					
7.2 Journals					
7.3.1 Vehicle Fuel					
7.3.2 Other Fuel					
7.5 Other Goods					
(10) 10.1 Furniture					
10.3 Machine & Equip.					
(11) 11.1 Land Purchase					
PART I SUBTOTAL					

* Actual expenditure should not include outstanding amount advanced.

Names of CFAs. in Post	Date Joining District	Permanent or Temporary	No. of Pancha- yats Covered	No. of MFTW Courses Attended
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

PART II - FIELD ACTIVITIES

			Rs.	Rs.	Rs.	Rs.
CFDP Budget only Budget Head	Annual Targe	Annual Progress	Annual Alloca- tion	Amount Released	Actual* Expendi- ture	Amount Advanced
(Rs.)						
(8) <u>Donation & Contribution:</u>						
(a) PFF & PFW Wages						
(b) Nursery & Plant tools						
(9) <u>Miscellaneous: (No.)</u>						
(a) Training nursery fore- men and watchers						
(b) District Seminar						
(c) Regional Seminar						
(d) Group Study Tour						
(e) Others (Arbor Day, etc.)						
(12) <u>Construction & Imp. (No.)</u>						
(12.1) Building Constr:						
(a) DFC Office						
(b) DFC Quarter						
(c) Guest House						
(d) Range Office						
(e) Range Quarter						
(f) Other Improvement						
(12.2) <u>Other Constr. (No.)</u>						
(a) <u>Nursery Constr:</u>						
i) District Nursery						
ii) Range Nursery						
iii) Panchayat Nursery						
(b) <u>Seed Procurement (Rs)</u>						
(c) <u>Nursery Operation (No.)</u>						
i) District Nursery						
ii) Range Nursery						
iii) Panchayat Nursery						

PART II - FIELD ACTIVITIES

		Rs.	Rs.	Rs.	Rs.	
CFDP Budget Head (12.2) continued	Annual Target	Annual Progress	Annual Alloca- tion	Amount Released	Actual* Expendi- ture	Amount Advanced
(d) <u>Demarcation (Km.)</u>						
i) PF demarcation						
ii) PPF demarcation						
(e) <u>Planting (ha.)</u>						
i) PF planting						
ii) PPF planting						
(f) <u>Replacement planting (No. of Plants)</u>						
(g) <u>Weeding (ha.)</u>						
(h) <u>Fire protection (ha.)</u>						
(i) <u>Fencing (meters)</u>						
(j) <u>Management Plan Preparation (No.)</u>						
i) PF						
ii) PPF						
(k) <u>Trial Plots (No.)</u>						
(l) <u>Stoves Distributed (No.)</u>						
(m) <u>Other (Specify):</u>						
PART II SUB TOTAL						
TOTAL CFDP FIELD BUDGET (PART I + PART II)						

* Actual expenditure should not include outstanding amount advanced.

ANNEX II (Cont.)

PART III - ADDITIONAL INFORMATION ON FIELD ACTIVITIES

		<u>Target</u>	<u>Achievement</u>
1.	Total <u>number of seedlings</u> produced in district(s) in the year:		
2.	Total number of <u>seedlings distributed</u> for private planting in the year:		
3.	Total number of <u>households/institutions</u> receiving free seedling in year:		
4.	Total number of <u>PF handed over</u> in year:		
5.	Total number of <u>PPF handed over</u> in year:		
6.	Total <u>hectare of PF</u> handed over in year:		
7.	Total <u>hectare of PPF</u> handed over in year:		
8.	Total <u>number of PF watchers</u> employed:		
9.	Total number of <u>nursery naike trained</u> in year:		
10.	Total number of <u>PF watchers trained</u> in year:		
11.	Total number of <u>Pradhan Panchas</u> participating in study tour in year:		
12.	Total number <u>Forest Committees</u> established in District(s):		
13.	Total hectares covered by PF management plans:		
14.	Total hectares covered by PPF management plans:		

15. Names of Panchayats participating in programme during year:

Since 1979 - 80:

Since 1980 - 81:

Since 1981 - 82:

Since 1982 - 83:

Since 1983 - 84:

Since 1984 - 85:

Since 1985 - 86:

16. Major Problems, Successes, Comments (add additional pages if desired):

DISTRICT:

FISCAL YEAR:

TRIMESTER: 1/2
(Circle)CFA/RANGER FIRST/SECOND TRIMESTER MONITORING REPORT

CFA/RANGER:

DATE:

I. Nursery Report (Including District and Range Nurseries)

Name of Nursery	1.	2.	3.	4.	5.
Date new nursery construction complete					
Date operation plan complete					
Total seedlings required this year					
Usable seedlings in stock from last year					
Total seedlings in stock for this year					

II. Panchayat Report (Including participating panchayats without nurseries)

Name of Panchayat	1.	2.	3.	4.	5.
Ha. PF selected for planting					
Ha. PPF selected for planting					
Seedlings required for pvt. planting					
Ha. weeding conducted (PF & PPF)					
Km. demarcated (PF & PPF)					
Ha. PF handed over					
Ha. PPF handed over					
No. PF management plans prepared					
No. PPF management plans prepared					
No. Forest Committee Meetings Held					
No. Stoves Distributed					

Other Activities Conducted (e.g. extension activities, voluntary participation by panchayat, etc.):

Major Problems and Comments (continue on back side if needed):

ANNEX II (Cont.)

DISTRICT:

FISCAL YEAR:

CFA/RANGER ANNUAL MONITORING REPORT

CFA/RANGER:

I. Nursery Report (Including District and Range Nurseries)

Name of Nursery	1.	2.	3.	4.	5.
No. Total seedlings produced:					
No. Usable seedlings in stock for next yr.					
No. Private Planting seedlings distributed:					
No. Households/Institutions distributed to:					
Operation plan made (yes or no) for next yr.					
Signboard established (yes or no)					
Nursery naike trained (yes or no)					
Nursery Register (yes or no)					
Distribution Register (yes or no)					

II. Panchayat Report (Including participating panchayats without nurseries)

Name of Panchayat	1.	2.	3.	4.	5.
1. <u>Panchayat Forest - This year</u>					
Ha. PF planted this year					
No. PF handed over this year					
Ha. PF handed over this year					
No. PF management plans this year					
Km PF demarcated this year					
Plantation Register (yes or no)					
2. <u>Panchayat Protected Forest-This year</u>					
Ha PPF planted this year					
No. PPF handed over this year					
Ha. PPF handed over this year					
No. PPF management plans this year					
Km PPF demarcated this year					
Ha. Enrichment planting this year					

ANNEX II (Cont.)

Name of Panchayat	1.	2.	3.	4.	5.
<u>3. PF & PPF Combined - This year</u>					
No. plants replaced this year					
Ha. Weeding this year					
Total No. PFW working this year					
Total No. of PFW trained this year					
Ha. fire protection this year					
Meters fenced this year					
Total members in Forest Committee					
<u>4. Panchayat Forest - All Years</u>					
Ha. PF planted all years					
No. PF applied for all years					
No. PF handed over all years					
Ha. PF handed over all years					
No. PF management plans					
Ha. under PF management plans					
Km. PF demarcated all years					
<u>5. PPF - All Years</u>					
Ha. PPF planted all years					
No. PPF applied for all years					
No. PPF handed over all years					
Ha. PPF handed over all years					
No. PPF management plans					
Ha. under PPF management plans					
Km. PPF demarcated all years					
<u>6. Stoves</u>					
No. distributed this year:					
No. distributed all years:					

ANNEX II (Cont.)

Major Species Raised with Seed Source:

Species	Seed Source
1.	
2.	
3.	
4.	
5.	

Species	Seed Source
6.	
7.	
8.	
9.	
10.	

Major Problems and Comments:

CFAD - MEU

VOLUNTEERS/ASSOCIATE EXPERTS MONTHLY REPORT

DISTRICT(S):

DATE:

A/E VOLUNTEER:

PART 1: GENERAL DISTRICT REPORT

1) ACTIVITIES THIS MONTH:

2) SILVICULTURAL ISSUES (e.g. seed collection, technical problems, species success, techniques introduced, overall (success, etc.)

3) SOCIO-ECONOMIC ISSUES (e.g. land availability, people's motivation local leadership, success of programme, problems encountered, etc.)

SELECTED PANCHAYATS (Semi-annually or when known; note District)

<u>1983/84</u>	<u>1984/5</u>	<u>1985/6</u>
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.

4) TRAINING AND EXTENSION (e.g. courses held, adequacy of materials, problems and successes, etc.)

5) ADMINISTRATION AND LOGISTICS (e.g. positions unfilled, budget adequacy, supplies and equipment needed, etc.)

6) STOVE IMPROVEMENT (e.g. models received, surveys conducted, acceptance, local reactions, etc.)

7) TRIAL PLANTING (e.g. activities and results, etc.)

8) RECOMMENDATIONS, SUGGESTED CHANGES, REQUESTS, OTHER MATTERS:

PLANTATION SURVIVAL REPORTING FORM

- | | <u>No.</u> | <u>Name</u> | <u>Code/Value</u> |
|---|------------|-------------|-----------------------|
| 1. Name of PF: _____ | 1. | ID# | [][][][] + |
| 2. District: _____ | 2. | DIST | [][] * |
| 3. Panchayat: _____ | 3. | PAN | [][][][] + |
| Village/PF: _____ | | | |
| Surveyor: _____ | | | |
| Date: _____ | | | |
| 4. Year Planted: _____ | 4. | YEAR | [][] |
| 5. Hectares Planted: _____ | 5. | HA | [][][][] |
| 6. Total Seedlings planted: _____ | 6. | SDPL | [][][][][][][] |
| 7. Total Replacement No.: _____ | 7. | SDRP | [][][][][][][] |
| 8. Main Replacement Year: _____ | 8. | RPYR | [][] |
| 9. Average Altitude (m): _____ | 9. | ALT | [][][][] |
| 10. Main Aspect: (1) N, (2) NE, (3) E, (4) SE
(5) S, (6) SW, (7) W, (8) NW | 10. | ASP | [] |
| 11. Dominant Vegetation Before Planting
(1) Open grasslands (2) Small bushes
(3) Small tree bushes (non-tree)
(4) Scattered broad leaf trees
(5) Scattered conifers (6) Other | 11. | VEG | [] |
| 12. Natural Regeneration:
(1) Very good (more than 1,500 stems/ha.)
(2) Good (500 - 1,500 stems/ha.)
(3) Some (100 - 500 stems/ha.)
(4) Very little (less than 100 stems/ha.)
(5) None | 12. | NREG | [] |
| 13. Any Product Collected from PF last year?
(1) Yes (2) No | 13. | PROD | [] |

Type of Product	Collected Last Year? (Tick if yes)	Collected by Local People or Auction/ Contract?	Rupees obtained (if any)
Grass/Foroder Fuelwood Poles/Timber Fruit Other:			

+ Leave blank - to be coded later

* From code sheet

ANNEX III (Cont.)

RESULTS OF SURVIVAL COUNT

Species	Total No. Planted	Total No. Surviving	% Survival	Est. Ave. Height (nearest meter)	Est. Ave. DBH (nearest cm)	Reasons for lack of Survival (see codes)
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
TOTAL/AVE						

14. Total No. of species Planted:

14. SP #

15. Total No. seedlings Planted:

15. PL #

16. Total No. Surviving:

16. SUR #

17. Total Surviving Percentage

17. SUR%

18. Estimated average height for main species:

18. HTH

19. Estimated average dbh for main species:

19. DBH

20. Main Reason for Lack of Survival:

20. MOR₁

21. Second Reason Lack of Survival:

21. MOR₂

22. Third Reason Lack of Survival:

22. MOR₃ Comments and Remarks:

WORK SHEET FOR COUNTING SURVIVAL

Con- tour Tra- verse No.	Surviving Seedling Counted by Species								Total Surviving	Empty (Not Surviving)	Total Counted
	Species:	Species:	Species:	Species:	Species:	Species:	Species:	Species:			
1.											
2.											
3.											
4.											
Sub Total											
Est. Ave. Ht.											
Est. Ave. dbh											

PRIVATE PLANTING SURVEY

ANNEX 111 (Cont.)

01 ID

1. Year of distribution being sampled: 198..... Surveyor:.....
(see No. 25 next page) Date:
2. District (DFC Headquarters) 02 FDHQ
3. District of Survey 03 DIST
Panchayat
Ward Number Village Name
4. Household Head Name or Institution Name
.....
Code (0) for household, (1) for Institution . 04 INST
5. Estimated Altitude: (1) 1-1000m (2) 1000-2000
(3) 2000-3000m. (4) above 3000m 05 ALT
6. Number of cattle and buffalo 06 LLIV
7. Number of sheep and goats 07 SLIV
8. Number of household members 08 HHP
9. Ethnic group/caste 09 ETH
10. Amount of Khet .. Unit: Ropani .. or Bigha . 10 KHET
11. Amount of Bari .. Unit: Ropani .. or Bigha . 11 BARI
12. Number of seedlings taken before sample yr... 12 BSED
13. Number of seedlings taken in sample year 13 SSED
14. Number of seedlings taken after sample year . 14 ASED
15. Distance from Nursery in hours and % of hr... 15 DIST
- (Note one day = 8 hours)

Name of Species	Number Planted	Estimated Number Surviving	Where planted (1) house (2) bari (3) khar/bari (4) other	Est. Ave. Ht. (nearest meter)	Est. Ave. dbh (nearest cm)	Main Reasons* for Mortality		
						1st	2nd	3rd
1.								
2.								
3.								
4.								
5.								
TOTAL								

Average % Survival _____

For main species

* From code sheet + Leave blank - to be coded later

ANNEX III (Cont.)

- | | | | | |
|-----|---|----|------|--|
| 16. | Total planted seedlings surviving for yr. counted.. | 16 | SUR | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 17. | Average survival Percentage | 17 | SUR% | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 18. | Who brought most of the seedlings?
(1) Adult male (2) Adult female (3) Child (4) Non-household member | 18 | BRGT | <input type="checkbox"/> <input type="checkbox"/> |
| 19. | Estimated average height for main speciesm | 18 | HTH | <input type="checkbox"/> <input type="checkbox"/> |
| 20. | Estimated average dbh for main speciescm | 19 | DBH | <input type="checkbox"/> <input type="checkbox"/> |
| 21. | Method of seedling transport | | | |
| | (1) with poly pot container (2) bare root | 21 | METH | <input type="checkbox"/> <input type="checkbox"/> |
| 22. | Number of times weeded after planting | 22 | WEED | <input type="checkbox"/> <input type="checkbox"/> |
| 23. | Main reason for failures | 21 | FAIL | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 24. | Number desired in 1983 | 22 | SED3 | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| | (If not known, code 99) | | | |
| 25. | Year of distribution being sampled: 198... .. | 23 | YEAR | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 26. | Did they obtain the number and species they wanted?
(1) Yes, both number and species (2) yes, for number, no for species (3) no, for number, yes for species (4) no, neither number nor species (5) don't know | 26 | SPEC | <input type="checkbox"/> <input type="checkbox"/> |
| 27. | How did they first hear about seedlings being available?
(1) CFA, DFC (2) Naike-PFF (3) Heralu-PFW (4) Village leader (5) Observation - lives near nursery (6) Radio (7) Extension material (8) Meeting (9) School teacher (10) Other I don't know | 27 | HEAR | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 28. | Type of Sampling Used
(1) Simplified (2) Probability (3) Other | 28 | SAMP | <input type="checkbox"/> <input type="checkbox"/> |

COMMENTS/REMARKS:

isions*	
ality	
1	3rd

IMPROVED STOVE USE SURVEY

	V#	Name	Value/Code
1. Household name Ward No.:	01	HH #	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Village name			
<u>HOUSEHOLD CHARACTERISTICS:</u>			
2. District:	02	DIST	<input type="text"/> <input type="text"/> <input type="text"/> *
3. Panchayat:	03	PAN	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Village:			
Surveyor:			
Date (Roman):/..... 1983			
Main Cook's name:			
4. New stove type: (1) Insert (2) Double wall (3) Modified Magan Chulo (4) Other	04	NSTO	<input type="text"/> <input type="text"/>
5. Months installed:	05	AGE	<input type="text"/> <input type="text"/>
6. Floor installed: (1) Ground (2) 1st Floor (3) 2nd Floor (4) 3rd Floor	06	FLOR	<input type="text"/> <input type="text"/>
7. Installer #	07	INST	<input type="text"/> <input type="text"/> <input type="text"/>
8. Ethnic/group/caste (see code):	08	ETH	<input type="text"/> <input type="text"/> <input type="text"/> *
9. Regular number of household members:	09	HPOP	<input type="text"/> <input type="text"/> <input type="text"/>
10. Number children less than 10 years old:	10	CPOP	<input type="text"/> <input type="text"/> <input type="text"/>
<u>STOVE USE:</u>			
11. Present use of improved stove: (0) Used at present (1) not used	11	STOU	<input type="text"/> <input type="text"/>
12. (If not used at present) Number of months previously used:	12	MUSE	<input type="text"/> <input type="text"/> <input type="text"/>
13. (If not used at present) why is stove not being used)			
..... Skip to Question No. 25	13	NOTU	<input type="text"/> <input type="text"/>
14-18 Number of times improved stove used for the follo- wing purposes in last week:			
14. Main meals per week	14	MEAL	<input type="text"/> <input type="text"/> <input type="text"/>

+ Leave blank - to be coded later

* From code sheet

ANNEX III (Cont.)

	V#	Name	Value/Code
15. Snacks and tea per week	15	STEA	<input type="checkbox"/> <input type="checkbox"/>
16. Livestock feed per week	16	FEED	<input type="checkbox"/> <input type="checkbox"/>
17. Room heating	17	HEAT	<input type="checkbox"/> <input type="checkbox"/>
18. Other (specify) ^{1/}	18	OTH	<input type="checkbox"/> <input type="checkbox"/>
19. Type of traditional stove previously used by household: (1) mud stove (2) tripod 3 stones (3) both (4) other	19	TYPE	<input type="checkbox"/>
20-24 Number of times traditional stove used for the following purposes last week: ^{2/}			
20. Main meals per week	20	TMEA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
21. Snacks and tea per week	21	TSTE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
22. Livestock feed per week	22	TFEE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
23. Room heating	23	THEA	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
24. Other (specify) ^{1/}	24	TOTH	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<u>CONDITION OF IMPROVED STOVE</u>			
25. Firebox: (0) not cracked (1) cracked (2) broken.	25	FIRE	<input type="checkbox"/>
26. Front Arch: (0) not cracked (1) cracked (2) broken.	26	ARCH	<input type="checkbox"/>
27. Baffle: (0) not cracked (1) cracked (2) broken	27	BAF	<input type="checkbox"/>
28. Chimney: (0) not cracked (1) cracked (2) broken ..	28	CHIM	<input type="checkbox"/>
29. Repaired: (0) not required (1) not repaired (2) partially (3) completely	29	REP	<input type="checkbox"/>
30. Inside Chimney: (0) clean (1) soot accumulated (2) Ash accumulated (3) both ash and soot accumulated	30	ASHC	<input type="checkbox"/>
31. Is there ash in firebox or back connecting pipe (0) no (1) yes	31	ASHP	<input type="checkbox"/>
32. Number of times chimney cleaned by installer	32	CLNI	<input type="checkbox"/>
33. Number of times chimney cleaned by household	33.	CLNH	<input type="checkbox"/>
<u>STOVE INSTALLATION</u>			
34. Measurements: (0) Within tolerance limits (1) Slightly exceeds limits (2) Greatly exceeds limits	34	MEAS	<input type="checkbox"/>

^{1/} For example: wine/alcohol. of

^{2/}

			ANNEX III (Cont.)		
	V#	Name	Value/Code		
35. Chimney installation: (0) Good (1) Minor problems (2) major problems (note separately)....	35	CHIM	<input type="checkbox"/>		
36. Stove and chimney location: (0) Good (1) Bad....	36	LOCA	<input type="checkbox"/>		
37. Frequently used pots fit holes: (0) Good (1) Fair (2) Poor	37	PFIT	<input type="checkbox"/>		
38. Has user modified stove? (0) No (1) Yes - if yes describe under comments	38	MOD	<input type="checkbox"/>		
<u>FUEL USE PER WEEK (in kg.)</u>					
39. Estimated percentage fuelwood saving:	39	FUEL	<input type="checkbox"/>		
40. Amount of fuelwood used before improved stove per week	40	FUB	<input type="checkbox"/>		
41. Amount of fuelwood used at present per week	41	FUP	<input type="checkbox"/>		
42. Present price of fuelwood per kg:	42	FURS	<input type="checkbox"/>		
43. Average amount purchased before improved stove per week	43	FUPR	<input type="checkbox"/>		
44. Average amount purchased at present per week	44	FUPA	<input type="checkbox"/>		
45. Straw/Agricultural residue used before per week ..	45	AGRB	<input type="checkbox"/>		
46. Straw/Agricultural residue used at present/week ..	46	AGRP	<input type="checkbox"/>		
47. Dung burnt before per week	47	DUB	<input type="checkbox"/>		
48. Dung burnt at present per week	48	DUP	<input type="checkbox"/>		
<u>USER'S ATTITUDES</u>					
49. Meal cooking time: (0) Decreased (1) same (2) increased	49	TIME	<input type="checkbox"/>		
50. Comparative convenience: (0) better (1) same or mixed (2) worse	50	CONV	<input type="checkbox"/>		
51. Reduction in smoke: (0) like (1) mixed opinion (2) dislike	51	SMOK	<input type="checkbox"/>		
52. Heat in second pot hole: (0) sufficient (1) not sufficient	52	POT ₂	<input type="checkbox"/>		
53. Size of wood inlet: (0) O.K. (1) too small (2) too big	53	SIZE	<input type="checkbox"/>		
54. How did you know about the new stove: (1) Neighbours (2) Promoter/Installer (3) Village leader (4) Saw demonstration model (5) Extension booklet (6) Poster (7) Other extension agent (9) Other (specify):	54	KNOW	<input type="checkbox"/>		

ANNEX III (Cont.)

	<u>V#</u>	<u>Name</u>	<u>Value/Code</u>
55. Would you be willing to purchase replacement part of stove? (0) Yes (1) Yes if cheap (2) No (3) Don't know	55	PURC	<input type="checkbox"/>
56. Number of visits by promoter since installation	56	VIST	<input type="checkbox"/>
57. Estimated economic status of household (1) High (2) Average (3) Low	57	ECON	<input type="checkbox"/>

COMMENTS/REMARKS:

- If improved stove is not being frequently used for some purposes, Why not?

- What suggestions for improving the stove design or installation does the respondent have?

- Other Comments:

5

ANNEX IV

COMMUNITY FORESTRY DEVELOPMENTPRELIMINARY FIELD ACTIVITIES OUTPUT SUMMARY UP TO MID-JULY 1983^{1/}

Field Activities	Unit	5 year target	Target to date	Achieved to date	82-83 target % achieved	% achieved to date
Panchayat Nurseries	No.	340	316	300	95	95
Village Nurseries	No.	51	34	33	97	97
Division Nurseries	No.	17	17	17	100	100
PF Planted	Ha.	11 750	3 200	3 709	94	116
PPF Planted	Ha.	3 910	2 269	336	22	15
Total Plantation	Ha.	15 660	5 469	4 045	70	74
Seedling Distribution	No.	900 000	359 000	1 075 500	208	300
Demarcation	Km.	4 500	2 825	1 437	60	51
PPF, PFW Training Course ^{2/}	No.	85	52	36	72	69
Stove Distribution	No.	15 000	2 775	2 630	100	95
Seminars/ Workshops ^{3/}	No.	60	59	22	62	37

PRELIMINARY SUPPORTING ACTIVITIES OUT-PUT SUMMARY UP TO MID-JUNE 1983

Supporting Activities	Unit	5 year target	Target to date	Achieved to date	82-83 target % achieved	% achieved to date
Building Construction	No.	131	131	47+(16) half	66	42
Radio Communication	Station	17	17	—	—	— ^{4/}
Vehicle Purchase	No.	12	12	11.	100	92

^{1/} Includes additional district of Jajarkot, Dailekh Forest Division.

^{2/} PPF and PFW training target fixed at one per year in each Division.

^{3/} National, Regional and District Seminars and publicity materials as required.

^{4/} Equipment arrived in April 1984, awaiting installation.

1981 & 1982 PLANTATION SURVIVAL RATES BY DIVISION

Division	No. of Plantations Counted	Total Hectare	Average Hectare	Survival % by Seedlings	Surv. % by Plant.	Average Seed Per Ha
ILAM	28	155	5.53	51.18	53.50	1798
KANCHAJANGA (Panchtar & Taplejung)	6	28	4.66	69.74	68.20	1652
TAMAKOSHI* (Ramechhap)	12	69	5.78	78.79	69.40	1775
TRISHULI (Dhading)	6	35	5.83	74.00	78.20	1697
GROKHA (Tanabu)	17	117	6.88	48.76	48.20	1478
POKHARA (Kaski & Syangja)	1	6	6.00	38.00	38.00	1667
DHAULAGIRI (Balglung & Parbat)	13	50	3.84	74.25	74.10	1845
ACHAM (Achman & Bajura)	15	34	2.26	55.32	56.80	1745
DOTI (Doti & Bajhang)	11	36	3.27	59.49	64.20	1639
DANDELHURA	5	30	6.09	62.90	64.20	1639
MAHAKALI	20	170	8.50	80.18	64.20	1639
TOTAL/AVE. BY COUNT (1981 & 1982)	130	731	5.45	64.69	61.00	1712
1981 Results**	37	197	5.32	59.92	58.62	1715
1982 Results**	97	534	5.50	66.41	61.80	1711

* If the two experimental direct seeding plantations are eliminated from this analysis, Tamakoshi's rates would be 84.76% and 85.76% respectively.

** See Annex 1 and 2 for details

COMMUNITY FORESTRY DEVELOPMENTKNOWLEDGE ABOUT COMMUNITY FORESTRY

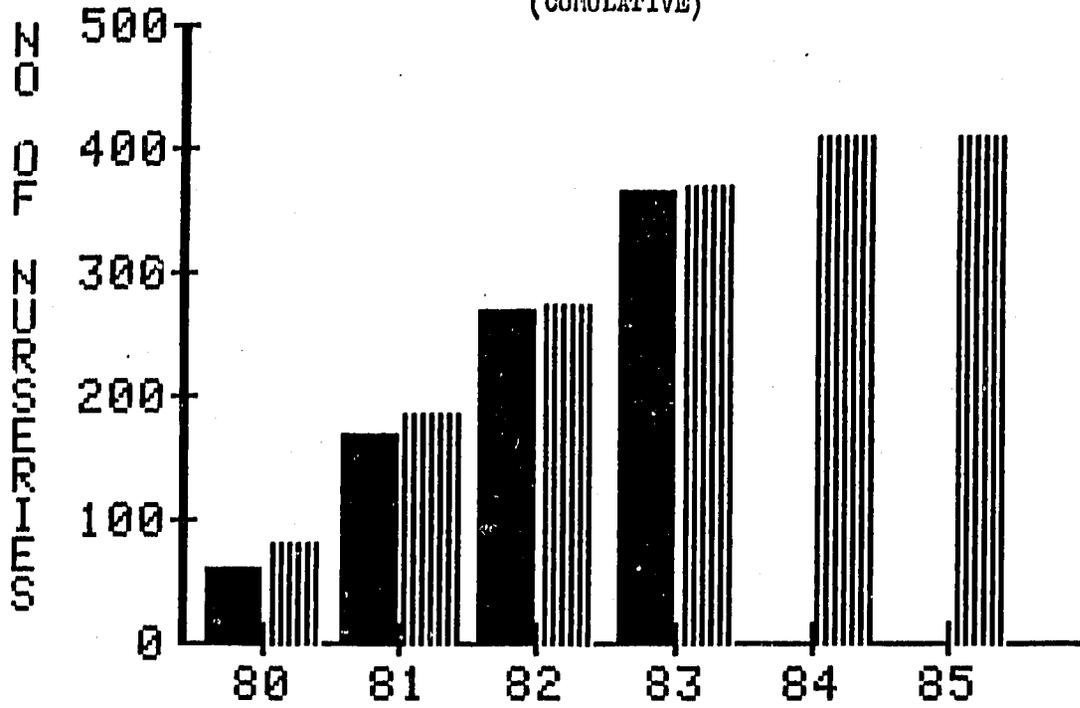
(in percentage)

			79/80 "Old" Panchayats	81/82 "New" Panchayats	Control Panchays
1.	Seen	- Household	59	29	19
	Nursery	- Ward Leaders	83	73	32
2.	Free Seedling	- Household	43	19	19
	Knowledge	- Ward Leaders	79	62	26
3.	Seen Forest	- Household	48	18	20
	Plantation	- Ward Leaders	77	39	36
4.	FF Ownership	- Household	32	22	27
	Knowledge	- Ward Leaders	63	52	37
5.	Possibility	- Household	62	60	50
	of PFs	- Ward Leaders	86	74	72
6.	PPF Rules	- Household	0	4	0
	Knowledge	- Ward Leasers	12	5	3
7.	Met DFO	- Ward Leaders	42	35	--
8.	Met CFA	- Ward Leaders	57	40	--

* Control panchayats are made up of randomly selected non-participating panchayats surveyed for comparison purposes.

OPERATIONAL NURSERIES

(CUMULATIVE)

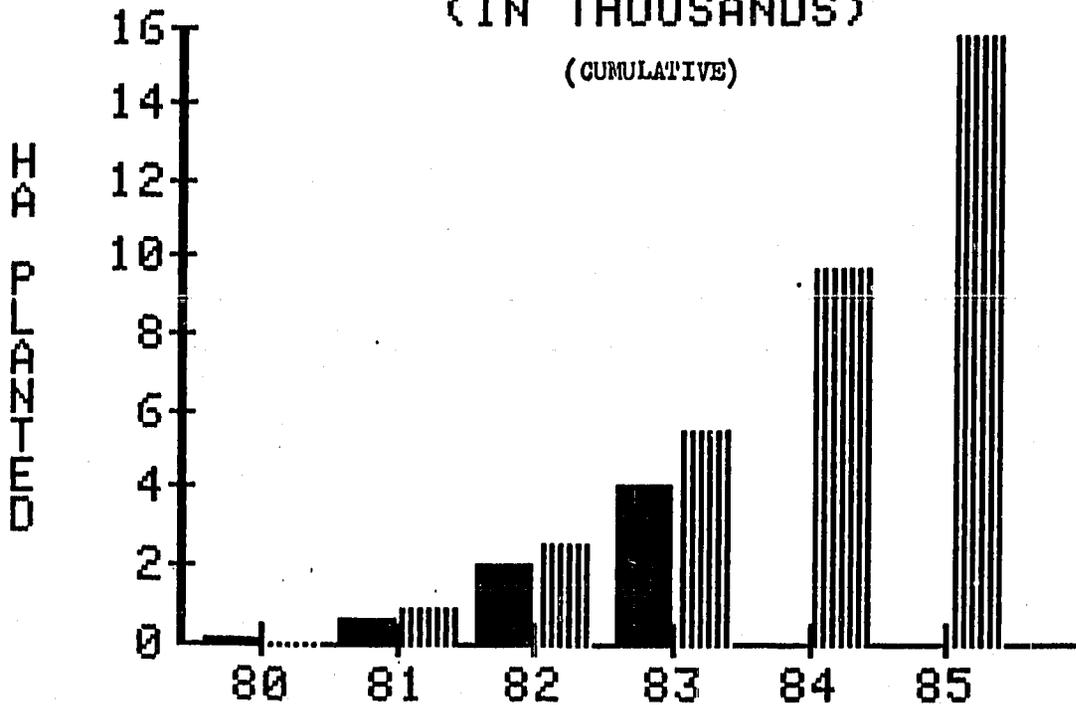


PROJECT PROGRESS
 SOLID BAR = ACHIEVED
 SHADED = TARGET

HECTARES PLANTED

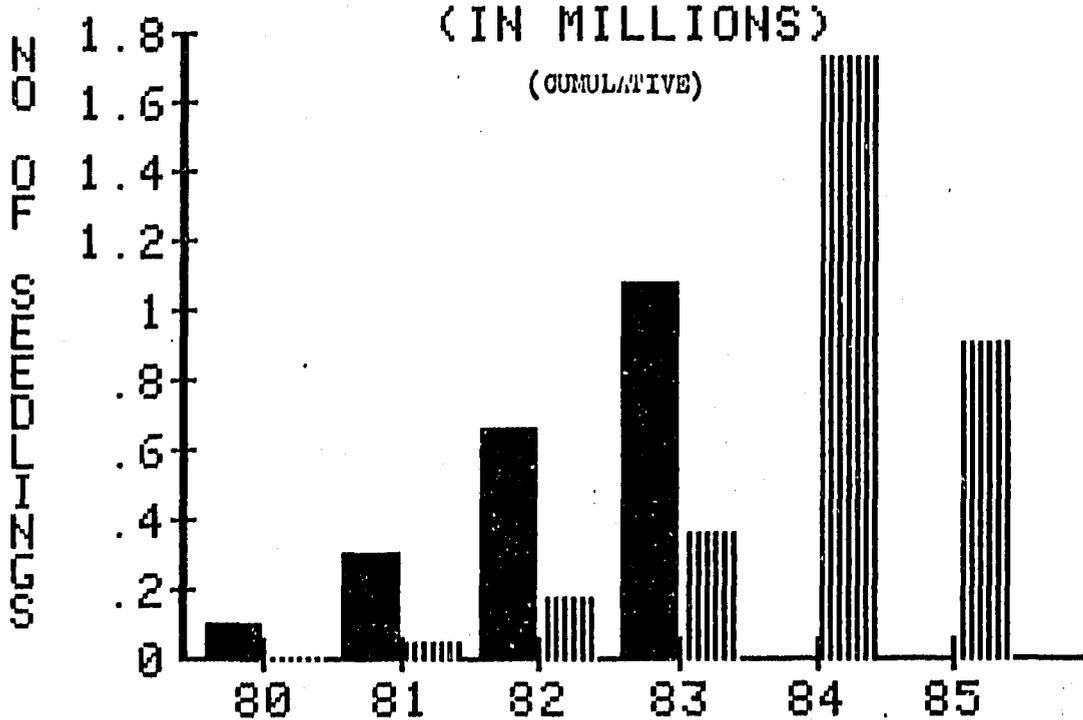
(IN THOUSANDS)

(CUMULATIVE)



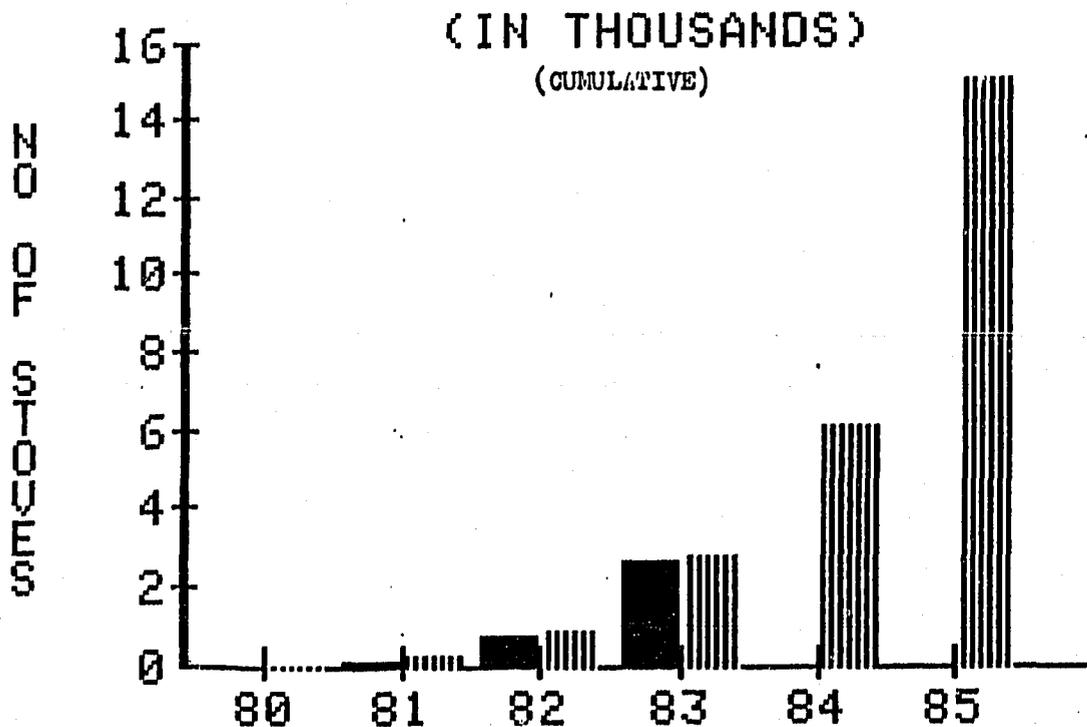
PRIVATE PLANTING

ANNEX V (Cont'd)



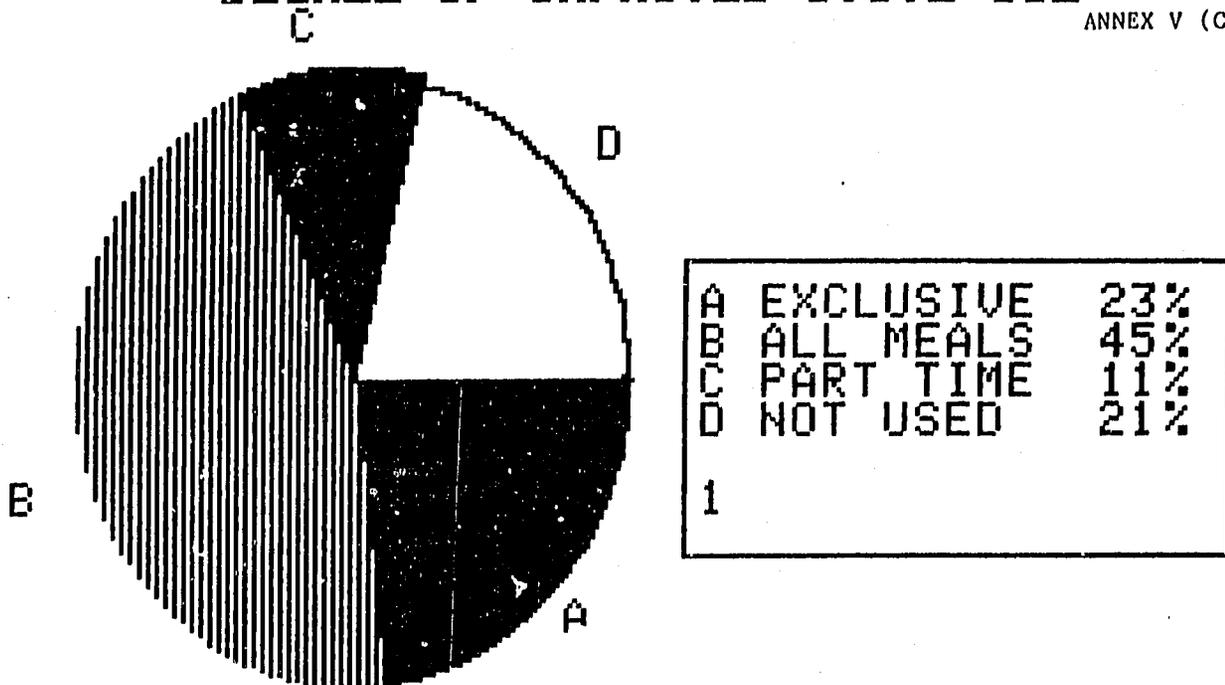
PROJECT PROGRESS
SOLID BAR = ACHIEVED
SHADED = TARGET

STOVE DISTRIBUTION

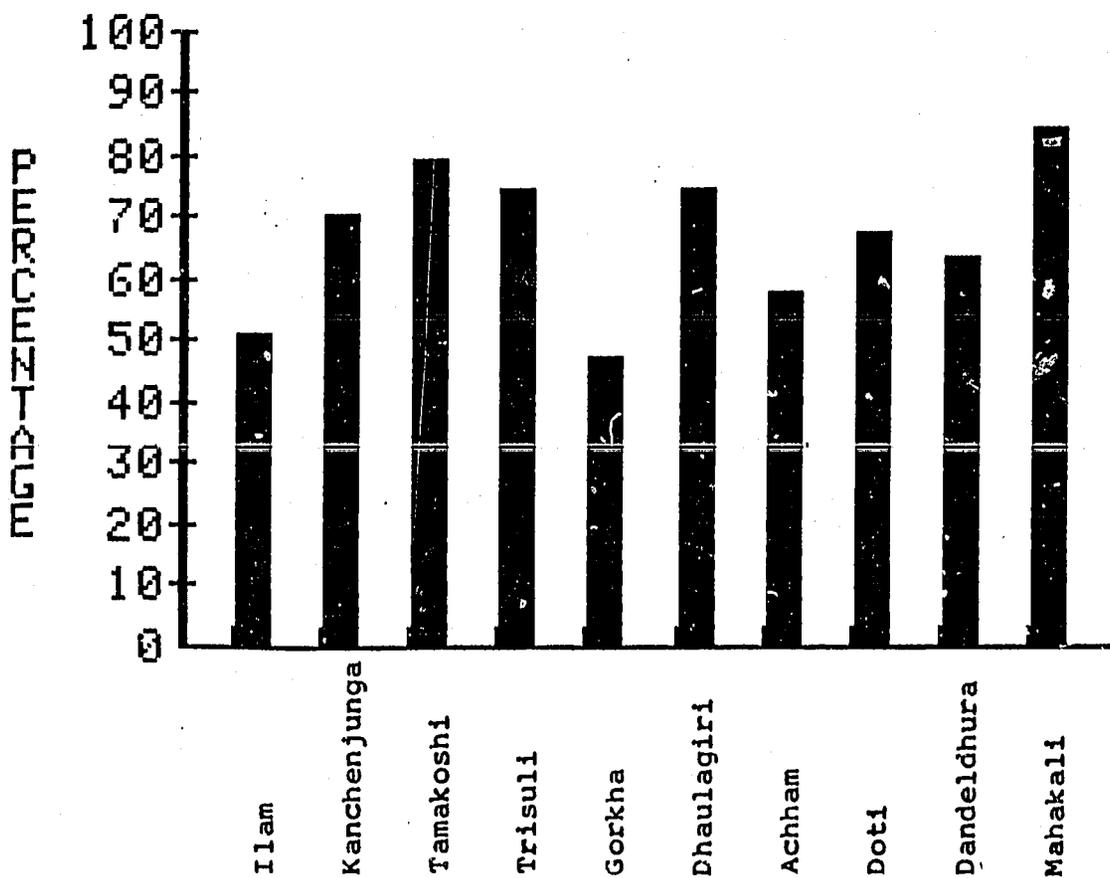


DEGREE OF IMPROVED STOVE USE

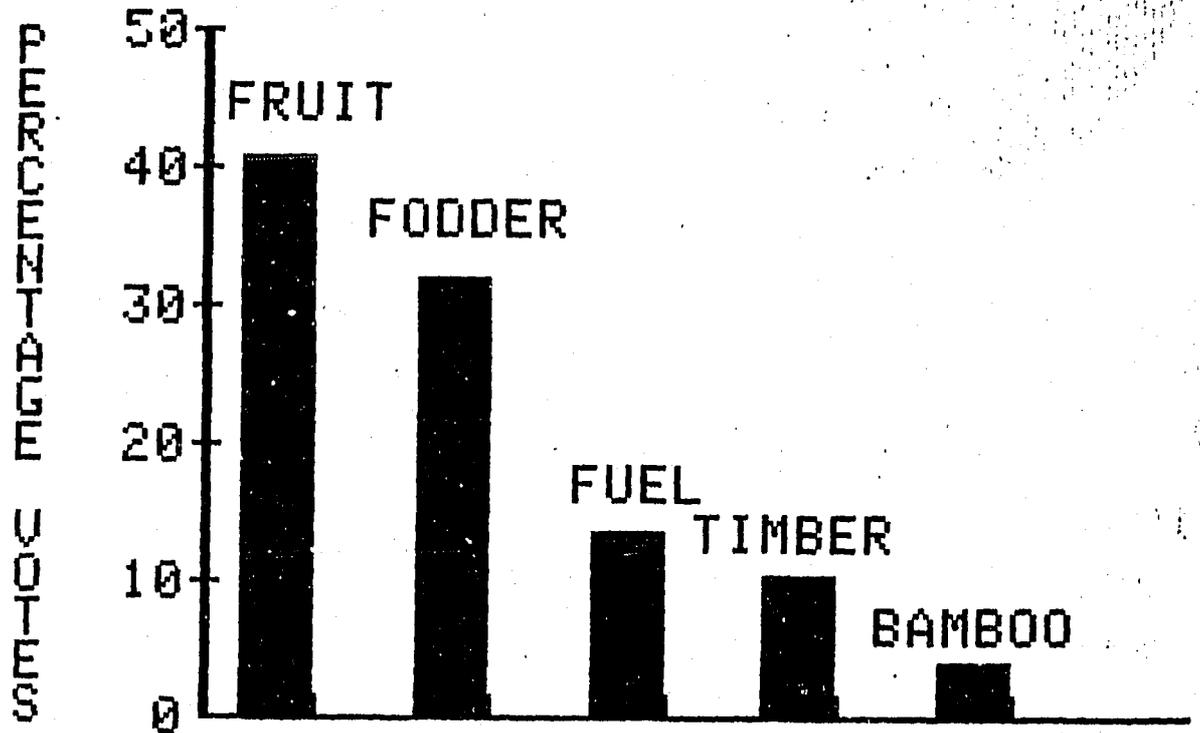
ANNEX V (Cont.)



PLANTATION SURVIVAL RATES



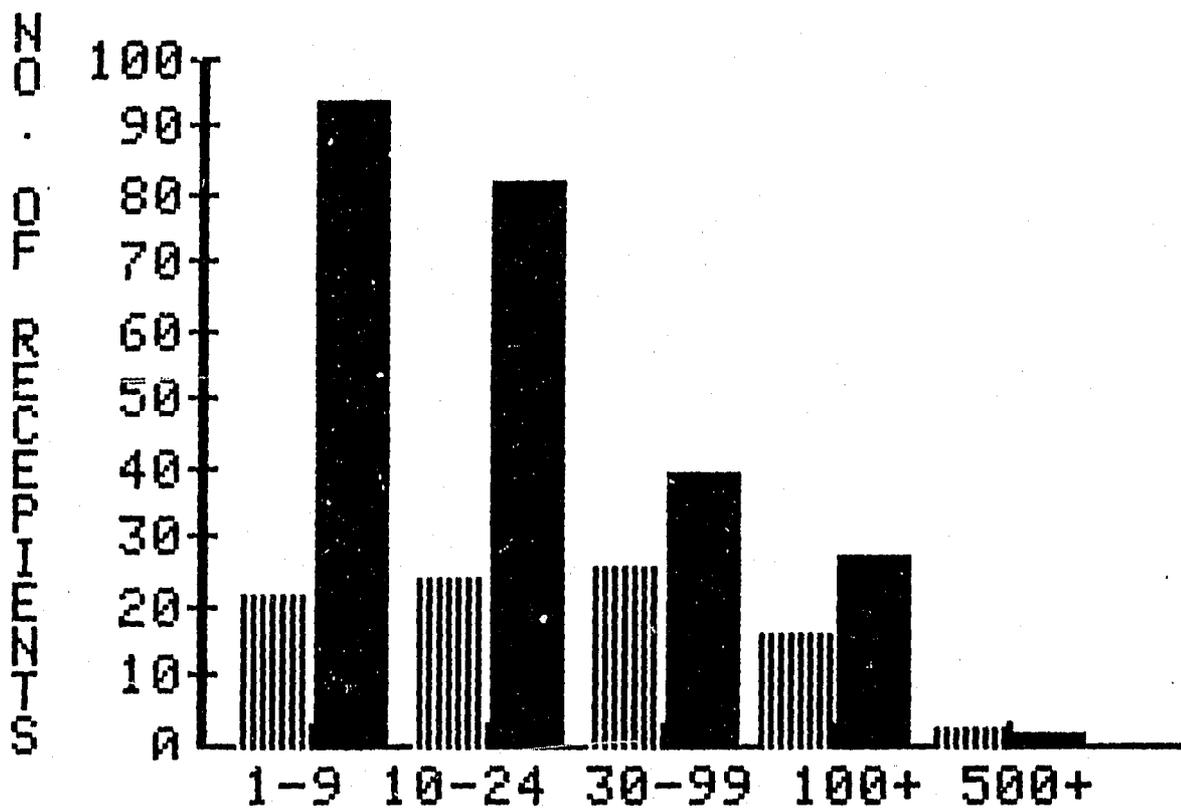
SPECIES PREFERENCES



HOUSEHOLD SURVEY RESULTS

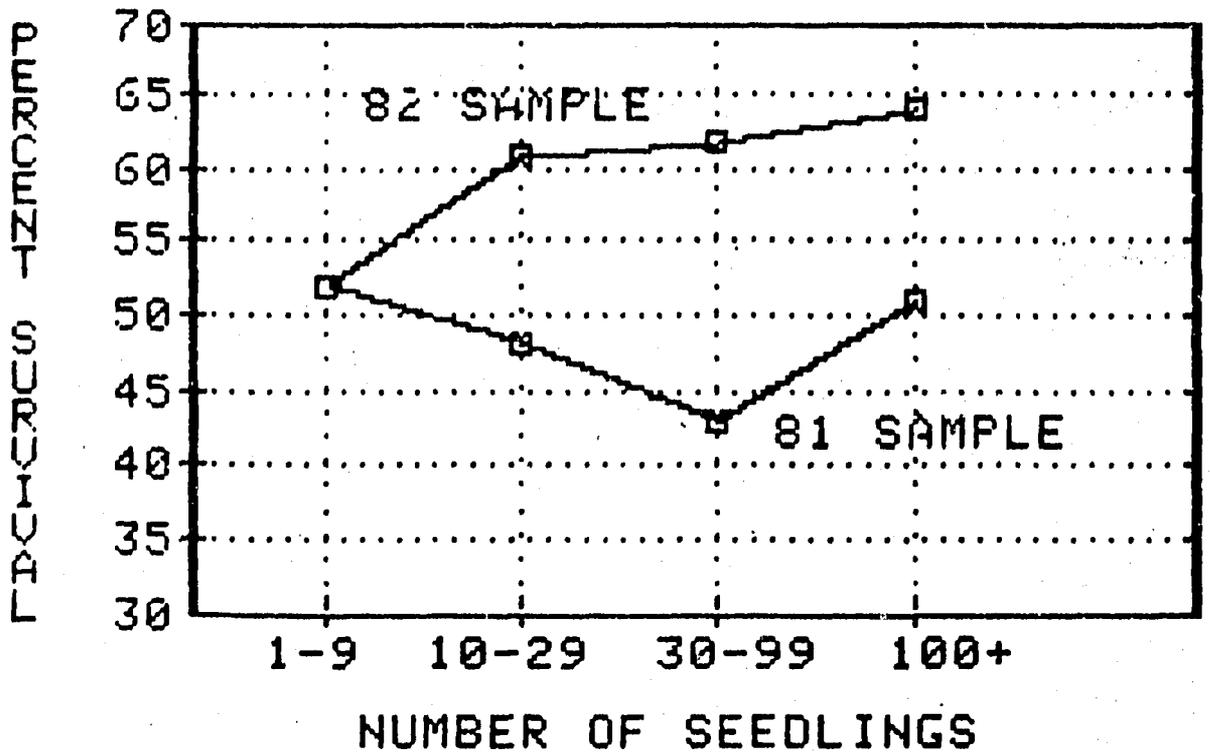
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SEEDLINGS TAKEN PER RECIPIENT



NUMBER OF SEEDLINGS
FIRST BAR = 1981 SAMPLE
SECOND BAR = 1982 SAMPLE

SURVIVAL BY NO. SEEDLINGS RECEIVED



SOCIO-ECONOMIC HOUSEHOLD/BASELINE SURVEY

(Sample Pages)

4. Private Trees and Seedlings

4.1 Trees owned over 5 yrs old		<u>Number</u>	<u>Number naturally regenerated</u>		<u>Number Planted</u>
4.1.1	Fodder trees	—	<input type="text"/>	4.1.1	<input type="text"/>
4.1.2	Fuelwood/timber trees	—	<input type="text"/>	4.1.2	<input type="text"/>
4.1.3	Fruit trees (except bananas and pineapple)	—	<input type="text"/>	4.1.3	<input type="text"/>
4.1.4	Bamboo clumps	—	<input type="text"/>	4.1.4	<input type="text"/>
4.1.5	Other (specify)	—	<input type="text"/>	4.1.5	<input type="text"/>
4.2 Trees owned less than 5 yrs old		<u>Number</u>	<u>Number</u>		<u>Code</u>
4.2.1	Fodder trees	—	<input type="text"/>	4.2.1	<input type="text"/>
4.2.2	Fuelwood/timber trees	—	<input type="text"/>	4.2.2	<input type="text"/>
4.2.3	Fruit trees	—	<input type="text"/>	4.2.3	<input type="text"/>
4.2.4	Bamboo clumps	—	<input type="text"/>	4.2.4	<input type="text"/>
4.2.5	Other (specify)	—	<input type="text"/>	4.2.5	<input type="text"/>

4.2 Main source code:

- 1 Community forestry nursery
- 2 Other nursery
- 3 Transplanted form own land
- 4 Other people
- 5 Natural regenerataion
- 6 From forest
- 9 Other (specify) _____

4.3 Means of protecting seedlings

- 1 In fenced area
- 2 Individual seedling fences
- 3 Grazing controlled
- 4 Inaccessible place
- 5 Protected by people
- 9 Other (specify) _____

4.3

4.4 Tree species preference

4.4.1 For fodder

- 1. _____
- 2. _____
- 3. _____

4.4.2 For fuel

- 1. _____
- 2. _____
- 3. _____

4.4.3 For timber

- 1. _____
- 2. _____
- 3. _____

Species Code

4.4.1

4.4.2

4.4.3

'd)

8. Forest Availability, Management and Perceptions

8.1 Compared to adjoining villages, does your village have more or less forest? 8.1

1 More 2 Less 3 Same 9 Don't know

8.2 Has your village's forests increased or decreased in the last five years? 8.2

1 Increased 2 Decreased 3 Same 9 Don't Know

8.2.1 (If answer 1 or 3) How? 8.2.1

1 Protected by villagers

2 Protected by Government

3 Population not increased

4 New plantations established

5 More than one answer

7 Other (specify) _____

9 Don't Know 8.2.2

8.2.2 (If decreased) How?

1 Population increased

2 Cultivation increased

3 Uncontrolled cutting

4 Too much grazing

5 More than one answer

7 Other (specify) _____

9 Don't know

4.3

- 8.2.3 Can villagers save the forests by practicing family planning? 8.2.3
- 0 No 1 Yes 2 To some extent
3 Does not understand family planning
9 Don't know
- 8.2.4 Do people in the village practice family planning? 8.2.4
- 0 No 1 Yes 9 Don't know
- 8.2.5 Do you think there should be more forest for your village? 8.2.5
- 0 No 1 Yes 9 Don't know
Why? _____
- 8.2.6 Should existing grazing land be turned into plantation? 8.2.6
- 0 No 1 Yes 9 Don't know
- 8.2.7 If a nearby forest is turned over to your village as a community forest, do you think it could be properly used and protected: 8.2.7
- 0 No 1 Yes 9 Don't know
- 8.2.8 Has your neighbourhood or panchayat ever had discussion/meeting on forest problems? 8.2.8
- 0 No 1 Yes, informal
9 Don't know 2 Yes, formal
- 8.3 How many loads of firewood can one person collect from the forest in a day? 8.3
- Bhari _____
- 8.3.1 How long does it take to reach the collecting site? 8.3
- Hours _____
- 8.4 Do you have a locally protected forest? 8.4
- 0 No 1 Yes 9 Don't know
END END





How have you protected this?

- 1 Paid watchman
- 2 Voluntary watchman
- 3 Fencing
- 4 Collective agreement
- 9 Other (specify)

8.1

8.4.2 How many wards are involved?

8.4.2

_____ Wards

B5

SOCIO-ECONOMIC VILLAGE LEADER SURVEY
(Sample Pages)

8.2 What percentage of bari land has winter crops growing on it which is protected from grazing?

8.2

9. Where are the following kinds of private trees mostly grown?

- 9.1 Fodder _____
- 9.2 Fruit _____
- 9.3 Fuelwood _____
- 9.4 Timber _____

Code

9.1

9.2

9.3

9.4

Codes: 1 = Around bari 2 = Around khet
 3 = 1 + 2 4 = Around house
 5 = 1 + 4 6 = 2 + 4
 7 = Kharbari/forest 8 = 1 + 7
 9 = 2 + 7 10 = 4 + 7
 11 = More than 2 12 = Other

9.5 Is there a nearby market for wood products?

9.5

1 Yes 0 No

(If yes) Fill in the following:

Product	Name of Market	Distance (in hours)	Trade Volume			Dis- tance (hr.)	Trade Code
			1 low	2 Medium	3 High		
9.5.1 Fuelwood						<input type="checkbox"/> 9.5.1	<input type="checkbox"/>
9.5.2 Timber						<input type="checkbox"/> 9.5.2	<input type="checkbox"/>
9.5.3 Other (furniture, tools, etc.)						<input type="checkbox"/> 9.5.3	<input type="checkbox"/>

9.6 Do any of the villages in this ward have their own protect forests?

9.6

1 Yes No
 ↓ ↓
 (if no, go to 10)

9.6.1 (If yes) What percentage of the ward participates in the protection? _____

9.6.1

What type of protection is used?

- 1 hired watchman 2 voluntary watchman
 3 fence 4 voluntary
 9 other (specify) _____

9.6.2 How many years has it been protected? (in yrs.)

9.6.2

9.6.3 What are the main species in the forest?

Species Code

1. _____
 2. _____
 3. _____

9.6.3

10. When the following are purchased or exchanged in kind, what is the average price (convert exchanges to rupees)?

Rs.

- 10.0 25 Kg (1 bhari) fuelwood Rs. _____
 10.1 1 bamboo pole Rs. _____
 10.2 25 kg of rice straw Rs. _____
 10.3 25 Kg of grass Rs. _____
 10.4 25 Kg of leaf fodder Rs. _____
 10.5 25 Kg of bedding Rs. _____
 10.6 25 Kg of manure Rs. _____
 10.7 1 pathi unhusked rice Rs. _____
 10.8 1 pathi maize Rs. _____
 10.9 1 pathi wheat Rs. _____

10.0

10.1

10.2

10.3

10.4

10.5

10.6

10.7

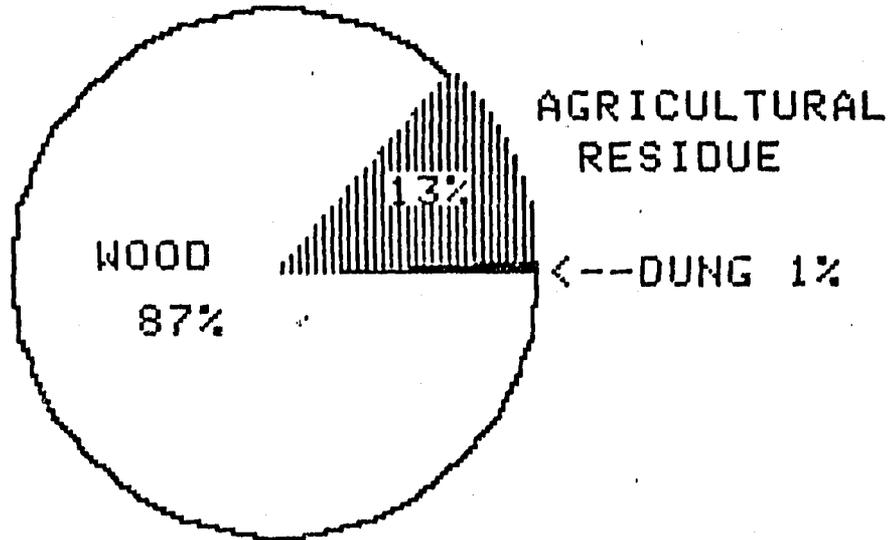
10.8

10.9

SOCIO-ECONOMIC HOUSEHOLD/BASELINE SURVEY

EXAMPLE OF FINDINGS

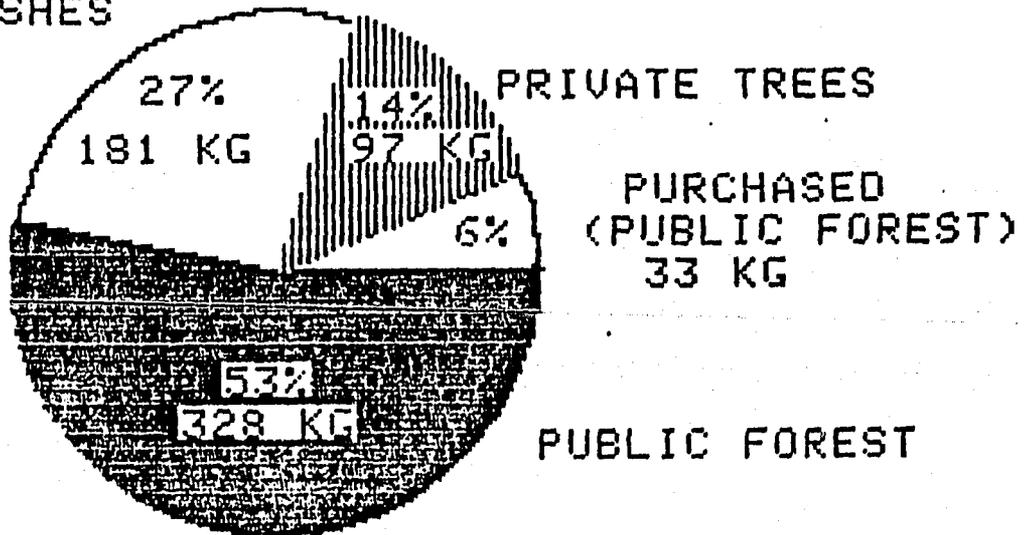
FUEL CONSUMPTION PER CAPITA



TOTAL = 738 KG. PER CAPITA

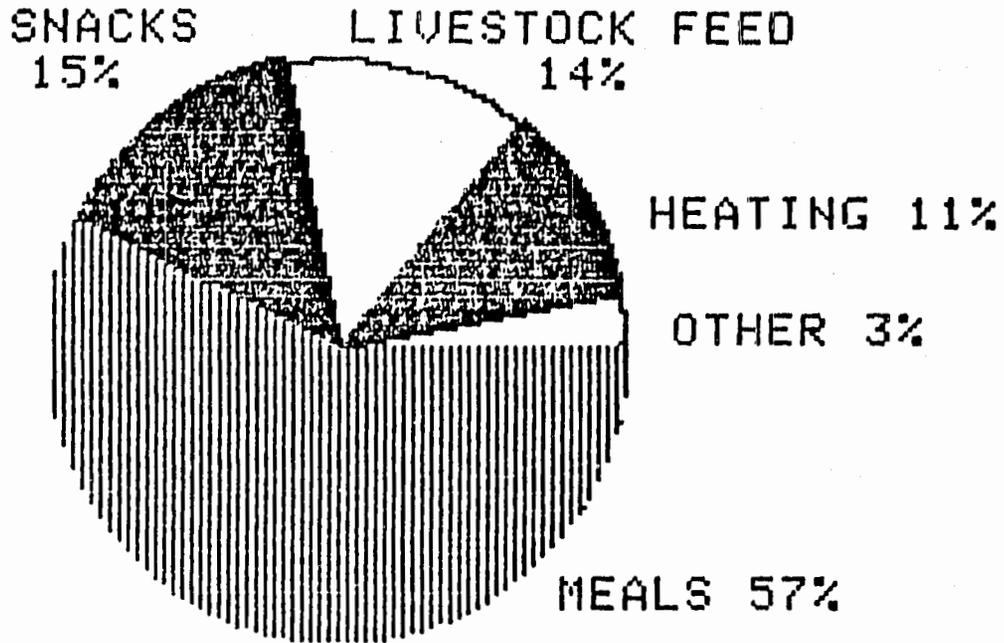
FUELWOOD SOURCES

TWIGS & BUSHES

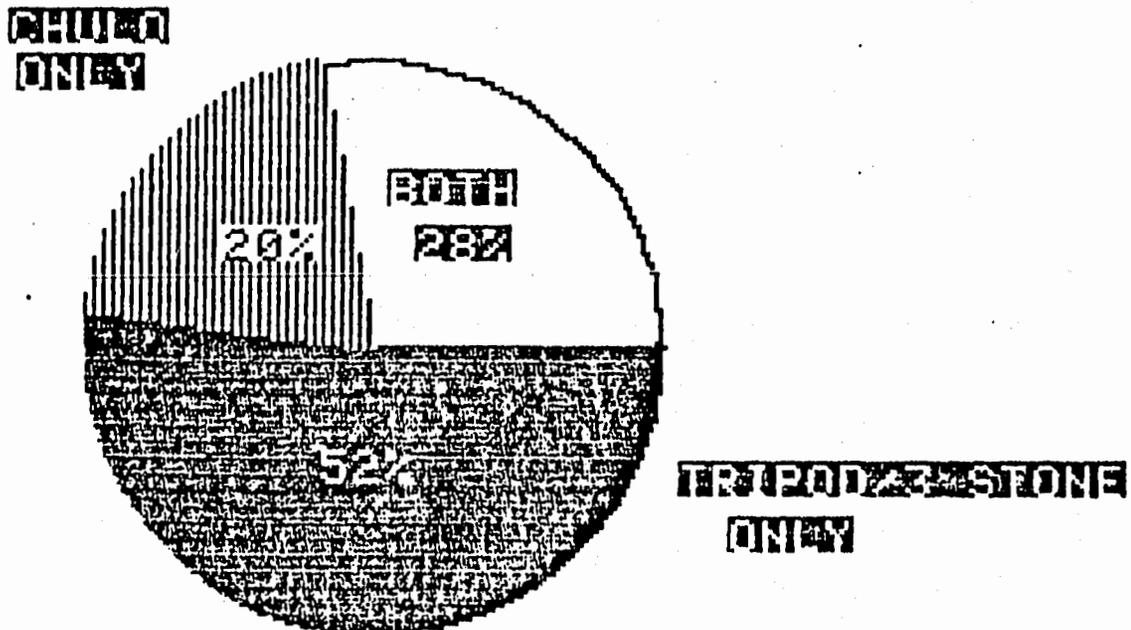


TOTAL FROM PUBLIC FOREST: 59% OR 361 KG

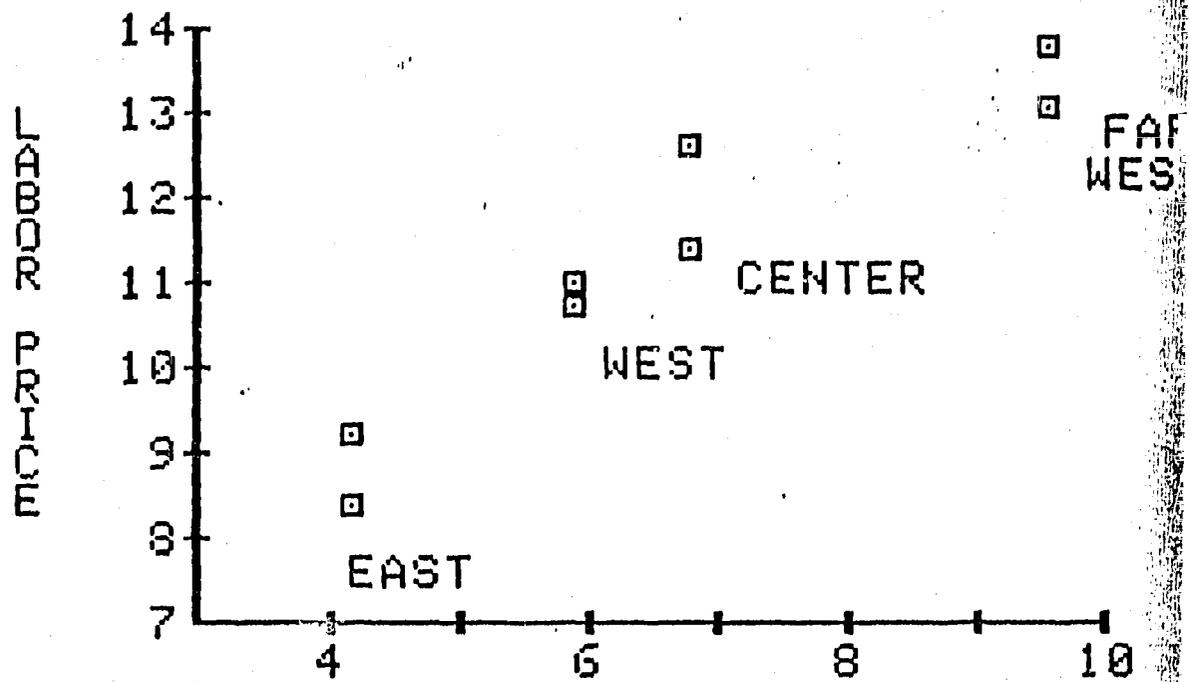
DOMESTIC FUELWOOD USE



STOVE DISTRIBUTION



FOREST PRODUCTS TO LABOR PRICE



AVERAGE PRICE OF FUEL, FODDER,
GRASS, BAMBOO, AND BEDDING
 $Y = 5.7 + .84X$ (R=.9)

TREE OWNERSHIP BY REGION BY HOUSEHOLD

Type	East	Centre	West	Far West	Hill Nepal
Fodder	13.5	9.4	16.7	8.6	12.1
Fuel/Timber	12.8	9.2	17.8	7.4	11.9
Fruit	2.2	2.2	1.6	3.9	2.4
Bamboo clumps	5.3	.9	1.3	.03	1.7
Total Trees	33.8	21.7	37.4	20.0	28.1
Total Seedlings	53.0	27.0	36.0	10.0	30.8

SOURCE OF TREE SEEDLINGS

Tree Type	CFAD Nursery	OTHER Nursery	OWN Land*	Natural Regeneration	Forest	Friends
Fodder	0.8	0.1	38.5	49.4	5.8	3.0
Fuel/Timber	0.3	0.7	14.6	76.4	3.6	N/A
Fruit	1.2	3.8	20.6	13.1	1.2	32.3
Bamboo	4.8	0.8	27.8	2.4	0.8	15.1

* Transplanted from own land.

CE

FAR WEST.

10

ER,
G

71