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REPORT ON
COMMUNITY FORESTRY WORKSHOP
12 - 14 JULY 1982
WASHINGTON, D.C.

AGENCY FOR INTERNATIONAL DEVELOPMENT
BUREAU OF SCIENCE AND TECHNOLOGY
OFFICE OF MULTISECTORAL DEVELOPMENT
RURAL & REGIONAL DEVELOPMENT DIVISION

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Harry Blair
July 29, 1982

REPORT ON
ST/MD COMMUNITY FORESTRY WORKSHOP
JULY 1982

The workshop was held on 12-14 July at the USDA Graduate School facility in Washington. Its primary purpose was to bring together a small group of experts, both from within USAID and from outside, to develop, analyze and criticize ideas for ST/MD's proposed Community Level Forestry Project (936-5427), contemplated to begin in FY 1984. Good representation and participation was obtained from the ST/FNR office, the forestry support team working on a RSSA with ST/FNR, and the regional bureaus within USAID. Outside consultants represented both the university community and consulting firms, and they brought to the workshop a wide experience in the three regions of principal interest to the project (Africa, Asia and LAC). Each of the consultants also submitted a short paper on a specific aspect of the proposed project. A list of all the participants is appended to this report.

Defining the topic. A definition of the primary subject to be addressed by the project turned out to have two dimensions: outlining or defining its nature; and giving it a name that would be widely recognized in the donor community and the forestry field as standing for the major project activities to be undertaken. The first proved easier to deal with, and after some discussion the participants agreed that the general subject area is:

ecologically sound development and management, with local participation, of resources for production and distribution of forest products for domestic use and small-scale marketing by people individually and as communities for their own benefit.

Naming this activity turned out to be more difficult. The original name, "community level forestry," connoted to many of those with experience in forestry an exclusive focus on community-based efforts like village woodlots, and so did the two-word description, "community forestry." "Social forestry" on the other hand seemed a bit too vague, with some disagreement as to whether or not agroforestry or farm forestry could fit under the rubric. A term like "local social and community-based forestry" might be more precise, but would be too cumbersome to be useful. No completely satisfactory solution was reached, but it appeared that "social forestry" is probably the most nearly satisfactory term.

"Agroforestry" is a term that sometimes causes confusion, and it seemed advisable to pin it down, too, which turned out to be an easy task; everyone was willing to accept the FAO's definition that it refers to "a combination of forestry and agricultural crop production, either simultaneously or in rotation."

Issues and Problems to be addressed. The workshop next turned its attention to what issues and problems in social forestry a project sponsored by ST/MD could most usefully take up in its major areas of concentration. ST/MD's abilities are naturally in considerable measure an outgrowth of its experience in its previous activities, and these might best be outlined by noting the projects currently in the office portfolio, which is done in the chart on the

OFFICE OF MULTI-SECTORAL DEVELOPMENT
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 USAID

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SELECTED ACTIVITIES
 related (even if very peripherally) to forestry

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ST/MD

DIVISIONS

RURAL &
 REGIONAL
 DEVEL.

RURAL
 INSTITUTIONS

DEVEL.
 ADMINISTRATION

EMPLOYMENT
 & SMALL
 ENTERPRISE

PRO-
 JECTS

CURRENT

- ① PARTICIPATION
- ② AREA DEVEL.
- ③ ACCESS TO LAND

NEW & PROPOSED

- ① WATER MGT.
- ② ENERGY EFF. CITIES
- ③ COMM. LEVEL

CURRENT

- ① RURAL SAVINGS
- ② ALT. RURAL DEVEL.
 STRATEGIES

NEW & PROPOSED

- ① FARMING SYSTEMS
 RESEARCH
- ② SM. FARMER MKT.
 ACCESS

CURRENT

- ① PROJECT MGT. EFFECT-
 IVENESS
- ② DECENTRALIZATION
- ③ ADMIN. OF INT. R.D.

NEW & PROPOSED

- ① PERFORMANCE
 MANAGEMENT

CURRENT

- ① SM. ENTERPRISE APPROACH
- ② APPROP. TECHNOLOGY
- ③ OFF-FARM EMPLOYMENT

NEW & PROPOSED

- ① SM. ENTERPRISE & ENTRE-
 PRENEUR DEVEL.
- ② MKT & TECHNOLOGY
 ACCESS

next page. All the projects listed in the chart deal in one way or another with developing social science knowledge and applying it to specific spheres of developmental activity, and it is in this context that ST/MD approaches social forestry. The task of the workshop at this point, then, was to figure out what problem areas in social forestry could be addressed on the basis of this background and experience.

Initial discussion in working groups and presentation in a plenary session provided a rather long list of issues, but with some effort it was possible to consolidate them into a fairly small number of problems and approaches to solving those problems. The chart below shows the consolidated result.

<u>PROBLEM</u>	<u>APPROACH TO SOLUTION</u>
1a. Overly rigid bureaucracy.	1. Institutional capacity building,
1b. Logistical resources.	bureaucratic reorientation.
2. Market situation, incentives at producer level, benefits to rural rich, land tenure situation.	2. Economic and social analysis.
3. Yields too low, trees dying, wrong trees chosen.	3. Research: specifically, the interface between social and biological services and creating a two-way interchange.
4. Continuing degradation of environment.	4. Building environmental awareness.

- | | |
|--|--|
| 5. Extension service inadequate or non-existent. | 5. Building extension systems. |
| 6. Forestry too isolated from everything else in development activity. | 6. Integrating social forestry into the rural development process. |
| 7. All of the above. | 7. Participatory strategies. |

The workshop again split into smaller groups with the charge of assessing priorities among the issues that had been consolidated in plenary session, as noted above. In exploring this question, the groups came up with the following list of priorities.

Group 1. -Degradation of environment.

- Agroforestry for income generation.
- Increasing population and subsistence needs.
- Training.
- Evaluation of ongoing projects, research and knowledge generation as an integrated activity.
- Regional research, starting with ICRAF.

Group 2. -Learning from experience.

- Developing generalizable knowledge and methodology, as well as comparative knowledge.
- Exercise all diliberate speed while donor community is enthusiastic about social forestry.
- Society/forest interface.
- Integrate social and biological science interface.

Group 3. -Elicit local knowledge and feed it back into projects.

-Two-way knowledge generation.

-Legal mechanisms: assessment and development.

-AID/host country relations.

-Core research facilities in USA and abroad; especially use of existing resources like Peace Corps.

-Cost/benefit analysis.

The experience of having distilled the original list (which were about equally as long and varied as this one) into a short list of 7 items, and then seeing it expanded back into another lengthy and heterogeneous list was somewhat unexpected. After some consideration, however, it seemed that several conclusions could be drawn:

(1) There is not a consensus or "conventional wisdom" among professionals in the field as to what are the three or four (or six or seven) major issues in the field, to say nothing of a consensus on the ranking of those issues.

(2) Accordingly, instead of starting out with a manageable set of issues to address, the project design process will have to develop that set. It may even be that the project itself will find that to some extent developing a set of issues is one of its purposes rather than one of its givens.

(3) Although a great deal of valuable work has been done and useful knowledge generalized, the "state of the state of the art" is still in a formative stage.

Regional strategies. The second day of the workshop was given over to devising strategic approaches to each of the three major regions concerned.

The purpose here was twofold:

- (1) to focus the general, global level discussions of the first day towards a more specific practical context, or, putting it a different way, to get closer to what a project would actually do in the field; and
- (2) to incorporate the concerns of the regional bureaus within AID directly into ST/MD's thinking at this early stage of project development.

Accordingly the workshop was divided into three regional groupings, one each on Africa, Asia and LAC (with the NE Bureau representative joining the Africa group).

Africa. The deliberations of the Africa group were very ably summed up in the short paper by Douglas Barnes, which is appended to this report and to which the reader is referred.

Asia.

1. Priority problems to be addressed.

a. Institutional capacity. There is both a knowledge gap and a policy gap here, which must be dealt with at the same time. On the policy side in particular, major problems exist with:

- (i) financial constraints on more progressive groups within forestry departments who have innovative ideas.

- (ii) extension efforts -- should be linked not just to forestry departments, but to other institutions as well, both local and governmental.
- (iii) systems of rewards within established agencies must be changed to encourage social forestry.
- (iv) training programs; social forestry training centers should be set up, with regular staff, curricula, etc.

b. Economic aspects.

- (i) empirical data base too thin; needs to be widened and deepened.
- (ii) land tenure questions -- ownership, rights of participation and access to land, incidence of benefits from rights in land.
- (iii) credit systems -- how can long-term risks associated with trees be reduced.
- (iv) legal and contractual issues, especially with community efforts in forestry.

c. Resource assessment at local level.

- (i) need to identify and coordinate existing project resources, both inside and outside government.
- (ii) assessment of degree of dependency on forest resources.

2. Staff and institutional resources

- a. More interdisciplinary approaches, like David and Frances Korten's work.
- b. Evaluation and monitoring methodology.
- c. Training.
- d. Credit mechanisms -- what should they be and how implemented (see also item (b)(iii) above).
- e. Seeds and seedlings supply.

3. Water synthesis project as model. This project will soon be on line in Asia, and, given the many similarities between water management and forestry management, should provide much in the way of useful examples.

Latin American and Caribbean

1. Typologies. There are two ecological zones of concern in forestry:
 - a. tropical lowlands where colonization is the major problem area;
 - b. highland areas where reforestation of deforested areas is the focus of paramount interest.

An overall theme is watershed management, particularly in its social issues and dimensions.

2. Social issues to take up.

- a. local priorities: what are they? why are trees not taken care of?
- b. non-economic incentives in forestry -- identification and analysis needed.

3. Economic issues.

- a. land tenure questions, e.g., when trees give value to degraded areas, who benefits? how can existing tenure systems be used to greatest advantage to provide incentive in social forestry?
- b. payment and contracting system for services in social forestry -- what systems work best, under what circumstances?
- c. on-farm forestry -- agroforestry and shelter belts.
- d. what are limits to economic considerations? for instance, when might tropical forestry projects with low benefit/costs ratios be worthwhile on other grounds, perhaps social or ecological, and when ought economic grounds be determining?
- e. different kinds of economic benefits to local people -- e.g., cash, subsistence, erosion control, etc. -- how can the mix best be assessed in project design and evaluation?

4. Institutional capacity building: host countries.

- a. bureaucratic reorientation in general, but with particular concern on improving understanding of social and economic concerns of citizenry affected by forests and forestry initiatives on the part of government.
- b. improving ability to work through local organization^s that are already in place to design projects, implement them, etc.
- c. enhancing institutional ability to increase local participation in forestry efforts.

d. improving capacity for self-analysis; there is little serious study of forestry projects, especially those that fail or have problems for institutional and/or sociological (i.e., non-technological) reasons.

e. develop interest in and capability for host country institutions to work with private sector, in particular community groups and indigenous confederations of citizens.

5. Institutional capacity building: AID.

a. interaction with forestry institutions in LAC region that are not in countries with AID missions, e.g., Mexico, Brazil.

b. providing findings and concepts to AID missions to stimulate interest in social forestry initiatives.

Where to go from here: putting together a project design.

After putting together the general regional strategies outlined above, the working groups turned their attention on the third and final day to drawing up scopes-of-work on what should be done to assess the present position in social forestry in the several regions in the form of a background analysis, from which a project paper could be written. What follows are the results of that deliberation: a preliminary scope-of-work for study and analysis of the current state of social forestry in the three regions.

SCOPES OF WORK: WHAT TO DO

I. ASIA

A. What to look at: types of activity involving social forestry.

1. Intensive agriculture -- farm forestry and village woodlots.
2. Common lands and pasturage -- fodder.
3. Slash-and-burn and swidden systems.
4. Watershed and area development projects.

These four types are, of course, distinguishable only in an analytical sense and in reality blend in together, e.g., numbers (1), (2) and (4) could be found in the same village in connection with the same activity. Still, from the AID standpoint it does make considerable sense to distinguish between them, as AID projects tend to concentrate on these aspects as being discrete, even within a particular project, and professionals in the field tend to think of them as distinguishable categories. At any rate, AID is involved in all these categories, and all should be examined as part of the background study.

B. Issues to analyze, for both ongoing and contemplated projects:

1. Institutional mechanisms for project implementation, particularly extension structures and their working.
2. Training and its relation to knowledge-building.
3. Opportunity costs in social forestry, especially their incidence.

4. Choices available

- i. to governments at national and provincial level, in terms of policy -- what do governments decide to do and why (i.e., what is the policy milieu within which social forestry projects operate).
- ii. to people at village level, both individuals and groups -- what choices do they have; how are these choices constrained by the prevailing legal and tenure systems.

5. The distribution aspects of forestry, before, during and after projects in social forestry.

6. Technical problems in forestry that could use social science help.

The first two issues here deal with training and extension, the next three with various aspects of distribution and policy, and the last with the biological/social science interface.

C. Countries to look at:

1. India -- ideal social laboratory setting with more than half a dozen state-level social forestry programs, each one similar to and yet significantly different from the others.
2. Indonesia -- biggest government commitment to social forestry efforts.
3. Philippines -- rich experimental experience with innovative approaches.
4. Thailand -- major government initiatives in social forestry, especially woodlots and taungya systems.

5. East Asian experience, particularly in China and Korea -- literature review would probably be sufficient here to draw lessons from these highly successful efforts, especially in shelterbelts and woodlots.
6. Malaysia -- success story in forest management.

D. Institution and individuals to be contacted.

1. Indian Institute of Management, Ahmedabad, Gujarat:
Anil Gupta and P.M. Shingi.
2. University of the Philippines at Los Banos: Gelia Castillo.
3. Bogor (Jogjakarta?) Indonesia: Sayogyo.
4. Ranchi Consortium for Community Forestry, Ranchi, Bihar, India.
5. Himal Sevak Sangh, an offshoot of the Gandhi Peace Foundation in India.
6. Kasturba Trust in Kasturbagram, Madhya Pradesh (near Indore), India.
7. Before planning anything: Deanna Donovan, the regional forester with the USAID mission in Jakarta.

II. AFRICA

A. What to look at: types of activity.

1. Agroforestry, especially training centers
2. Woodlot projects for roundwood and fuel
3. Shelter belts
4. Silva-pastoral projects

As with the Asian case, these categories are analytical and on the ground are often blended together. We should take care to include all these aspects in our analysis of the experience to date.

B. Issues to analyze.

1. The nature of community and its relation and relevance to social forestry.
 - i. land and tenure rights; rights of access.
 - ii. socio-economic division of labor, particularly divisions by sex, but also by age, class, etc.
 - iii. domestic consumption patterns for wood in particular, also general overall consumption patterns and how project benefits would fit into them.
 - iv. decision making institutions at local level.
 - v. local perceptions and knowledge of uses of forest products.
2. Program organization.
3. Local and indigenous capacities for undertaking forestry activities

C. Countries to look at:

1. Niger:
 - (a) Forest Land Use and Planning (FLUP) project, involving turning land from state forest reserve over to villages.
 - (b) Community woodlot experience, especially under the Canadian program.
2. Senegal: very successful forestry projects there, a good model.
3. Somalia: refugee reforestation activities, possibly lessons to be drawn for other areas like Pakistan.

4. Guinea: forestry project just beginning there will give chance to study design phase and monitor implementation as it progresses.

D. Institutions and individuals to be contacted.

1. International Council for Research in Agroforestry (ICRAF) in Nairobi, Kenya. Major involvement in farming systems operations.
2. George Taylor, USAID/Bamako, Sahel Development Planning Team.
3. James Seyler, USAID/Nairobi, regional forester for REDSO/EA.
4. First of all, MaryAnn Riegelman, Energy Initiative in Africa project; she is with AID/W in AFR/DR.

III. LATIN AMERICA & CARIBBEAN

A. What to look at: types of activity.

1. Tropical lowland areas; primarily colonization projects.
2. Highland areas; primarily reforestation efforts and farming systems.
3. Watershed management.

The observations made for Asia apply here also.

B. Issues to analyze.

1. Economic aspects in their social setting.
 - i. target populations: who and how identified?
 - ii. what is/has been/will be economic impact of projects and how are other economic activities affected?
 - iii. place of subsidies; are they desirable or feasible?
 - iv. incentives and disincentives, especially for local people.

2. Institutional aspects

- i. policy constraints: how have they affected efforts?
 - ii. linkages between implementing agency and other organizations working in this sphere; also between implementing agency and beneficiary agencies (e.g., local voluntary organizations, local governments).
 - iii. local participation: how best included?
3. How can indigenous knowledge of local forest ecosystems best be tapped as part of project design and implementation (the latter in the sense of incorporating that knowledge in making mid-course corrections in implementation).

C. Countries to look at:

1. Colombia: the Carton de Colombia project, especially lessons to be drawn about private sector involvement.
2. Haiti: agroforestry outreach experience.
3. Panama: watershed management efforts.
4. Peru or Ecuador: highland reforestation.
5. Peru: lowland tropical forestry.
6. Mexico: World Bank activities.
7. Cost Rica (CATIE)
8. Guatemala (ICATE).

The last three, and probably the first one as well, can be reviewed through the written documentation available. The others should be visited in the field.

IV. For all three regions, a good way to examine and understand these issues in a social science context that will be helpful to project design would be through the following typology:

1. The methodologies that are being pursued at the user level, e.g., cropping/farming systems, extension systems, credit systems.
2. The management and implementation strategies in use to provide the methodologies: e.g., how is the extension system being created, staffed, trained, evaluated, etc.
3. the policy decisions at national or provincial level that constrain strategies and methodologies.

APPENDIX 1

USAID Community Forestry Workshop
12-14 July 1982
Washington, D.C.

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COMMUNITY FORESTRY WORKSHOP - PAPERS ASSIGNED

MARILYN HOSKINS -	Cost and benefits in social forestry, esp. opportunity costs for groups not directly involved in SF activities.
JEFF ROHM -	Concepts on comparative analysis of social forestry projects. (Pending)
TED MacDONALD -	Incentives and disincentives for small farmers in social forestry.
JASON CLAY-	A typology for social forestry projects
PORUS OLPADWALA -	Institutional constraints on social forestry.
DOUG BARNES -	African strategy.
PAUL CHAKROFF -	Typology of social forestry - how we do/should look at it.
MICHAEL HOROWITZ .	Curricula design for training foresters -- how to find out what they need to know about social side of forestry.
BILL BURCH -	Social factors affecting the adoption of social forestry techniques.

NOTE: Topics for consultant papers were assigned in the final workshop session. The papers were to be brief sketches of the topics and not scholarly works or complete treatments of the material. Consultants were asked to send in their papers within two weeks of the workshop. Given these constraints, we are grateful for the considerable thought the papers reflect.

APPENDIX 2

Community Forestry Workshop

Consultant Papers

BENEFITS FOREGONE AS A MAJOR ISSUE FOR FLCD SUCCESS

Marilyn W. Hoskins

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Prepared for Community Forestry Workshop
Agency for International Development
Bureau of Science and Technology
Office of Multisectoral Development
Washington, D. C., 12-14 July 1982

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BENEFITS FOREGONE AS A MAJOR ISSUE FOR FLCD SUCCESS
(Reflections based mainly on experiences in West Africa)

Marilyn W. Hoskins
July, 1982

Benefits foregone as the major constraint for local participation or, for that matter, for success in any forestry/conservation effort, is not a new idea. The World Bank Forestry Sector Policy Paper, the early FAO Forestry for Local Community Development (FLCD) documents, and numerous individual reports and evaluations of field activities are filled with examples of efforts which failed when planners did not take into consideration various perceptions of benefits expected from available resources. The literature sites examples of forest plantations sabotaged by residents and examples of FLCD activities which failed to obtain local interest and participation due to differences in priorities over benefits lost and gained. Why is it then, that this theme, described so convincingly in literature of the 1970's, is a continuing theme at conferences, in policy papers, and in project evaluations today? Why have we not changed our project planning to more adequately identify, measure and maximize benefits gained versus those foregone?

Reflections on these questions, mainly based on experiences in Africa, make me wonder if those of us who have called for more consideration of this issue have viewed it too simplistically ourselves. Perhaps we have failed to identify and address the various facets contained in this generalized concept. Has our research failed to provide planners with adequate information and

tools with which to make the necessary sensitive and realistic choices?

Perhaps there is need to further examine: A. Less visible benefits local residents derive from available resources and those which are changed when trees are planted; B. Benefits of FLCD as they relate to persons and groups in various positions of power; and C. What we might do to strengthen our information or our tools and techniques to better minimize negative and increase positive benefits in FLCD activities.

LOCAL RESIDENTS

In looking at issues involving benefits foregone for local residents, one must note that tree-related activities require residents to take new risks and obligate vegetation, land and/or time, energy and funds in a different manner than they have done for short term crops. At least three issues related to benefits foregone for locals are raised by tree related projects. They are as follows:

1. *Competition for land and labor with agricultural, herding, and collecting gathering activities*, is probably the most important of these considerations. If land is in current use for intensive agriculture, it is evident that planting trees on some or all of it will change its economic return. The less visible benefits foregone come when project designers select "vacant land" for tree planting activities. Land which contains no intensive agricultural crop is quickly judged to be "available for development." In the area where I have worked, I know of no land, upon which trees will grow, which is not serving some function and which is not considered under the control of someone or some group. In areas of harsh ecologic conditions,

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such as the Sahel, the need for land to be fallowed over an extended period may mask the fact that vacant looking land is really being saved or "conditioned" for future crops. Animals, at the same time, may be grazing there as frequently as the vegetation can support them, if not more often, at the same time enriching the soil with their manure. Products are also most probably being collected and gathered from this land for basic household consumption and possibly for barter or sale. However, because much of the benefit derived from this vegetation goes to non-landholders, the poor, is collected by women, or finds its way into the non-monetized or informal sector, it generally escapes the economic analysis which is part of the ordinary project design. When this land is then cleared for project activity, benefits lost to various groups are not calculated.

The need for more information on this aspect of benefits foregone is beginning to be identified. As more land is cleared for intensive agricultural or forestry development, bush products (including fuel wood), which used to be readily available, are becoming scarce enough to enter the market economy. In Niamey there is a whole section of formerly free "bush products" which has sprung up in the market during the last few years. Studies are beginning to note the negative impact on poor families who have to add these items to their budgets.

Scattered studies are also beginning to give us some specific data on the variety and volume of food, fuel, fodder, medical, craft, and other economic plants found in the natural vegetation. (For example, see Christophersen and Weber). However, information from these reports is

specific and scattered. Support for such research often comes from one of our diverse funding agencies or bureaus and, therefore, focuses on one limited aspect, such as energy. This causes our research to underplay the essentially multipurpose nature of the use of natural vegetation. The more complete picture of the overall value of this natural growth, which would be useful to project planners, is not readily available. There is great need for research on these products, and for a document to help planners estimate benefits foregone to differing groups of local people when bush land is cleared for project activity.

Another aspect of needed research on the use of natural vegetation especially in areas of fragile environmental conditions and erratic weather (such as in the Sahel), deals with the competition for resources not only in good or "average" years, but in drought or stress years. During recurrent periods of famine, residents rely on the "useless bush" areas for supplying fodder, food, and sometimes even added income. Plants which are not used in other years, because they are less desirable, become the essential and life saving supply. We have almost no data on the more complete dependence on natural vegetation during times of severe pressure. Do residents look at this type of land as insurance for times when the ordinary carrying capacity of the land is greatly diminished? Many studies show that herding families regard what we used to call "overly large herds of unproductive cattle" more as "savings on the hoof" than as our reports call "collections of cattle for irrational prestige value." Perhaps this land is considered locally as savings for a welfare support system. In this case, changing its diverse benefits to

specific products may substantially undercut the poor in good years and all residents in times of drought. Well designed and placed tree planting activity, recognizing the various demands should be able to enrich land value while preserving its multiple benefits, and even reducing the risks during drought years. However, when the value is enriched, a social question arises. Can one increase the value of this land without encouraging the powerful to claim the benefits? (See further discussion next section.)

Some of the more recent forestry project designs have focused on eliciting opinions of local residents as to their needs. However, seldom do project designers fully examine the potentially conflicting needs of all people involved--urban-rural, herder-farmer, women-men, landless-landed, or large and small land holders, etc. If a project designer takes the available resources and focuses all efforts on improving the livelihood of one group, does (s)he also see the benefits foregone to the others? These differing demands are difficult to discover in the ordinary several week project design period, and we need to develop better ways to involve a larger spectrum of people in supplying information and making choices during the design phase.

New activities are always measured by potential participants against benefits and insufficiencies of current practices as well as by their hopes and fears for the future. Planners must understand the total equation of who stands to gain and who stands to lose, and the local perceptions of the value of these gains and losses, before they can begin to predict local involvement in (or for that matter tolerance for) FLCD activities.

A final point deals with competing demands for labor. In Africa, one must disaggregate agricultural and other labor requirements in relation to whose labor will be involved in the specific task. Usually the planting, watering, weeding, and protecting tasks are done by specific sex, age or occupation groups, and not by others. This information must then be correlated with other demands made or opportunities available during the same period for those men, women, children, farmers, landless, or other groups who would be responsible for the specific aspects of the new activity. It is always important to analyze if the individuals or groups who are giving up other pursuits to do the work in this activity are the ones who also gain benefits from its results. (This is further analyzed in the following section.)

It would appear, then, that future research will need to focus on not only current use of natural resources but also on overall needs for resource development as seen by various local groups of people. Information must be available not only on resource management in good years but also in times of stress when the carrying capacity of farmland and pasture is much lower. We need a more holistic picture of benefits available and their distribution, of labor and other investments required by the current use of resources, the priorities for additional produce by differing people and ways to calculate the economic and social benefits gained and lost under various potential management schemes.

2. *Changing timeframe caused by trees as a more slowly growing crop,* is a second consideration. There are two aspects relating to this time change factor which must be viewed separately. First, trees require year round

protection for several years, while traditionally short term crops require protection only during the agricultural season(s). In Africa, many communities have seasonal migration patterns allowing a large part of the work force to seek off-season employment. Benefits of this added income may be lost to those having to stay in a community to protect trees. Also, in many African communities there is a symbiotic relation between herders and farmers. One of the less visible examples of benefits foregone when trees are planted in field, deals with the practice by herder bringing animals into the fields during the dry season. The animals are watered at the village wells when other water sources have dried, and they eat the stubble in the fields while depositing manure. When there are fences, making it possible for local laborers to take off farm employment, the benefit of enriching their fields from the cattle is nonetheless foregone. Where there are fences, the ordinary farmer, who cannot afford commercial fertilizer, has the option of collecting dung and hand fertilizing fields or of growing less productive crops. The herders' cattle have also lost a food source near the available water supply. These benefits often escape planners focused on tree protection.

The second aspect of the benefits and timeframe change, relates to the greater length of time before the crop matures and benefits are obtained. Even if the eventual tree crop promises better results than the current land use, the length of delay before the trees are mature enough to produce a return may mean that locals have less produce from their resources than the amount of fodder, fiber, or food they need for current daily existence. Providing short term alternatives for current products foregone is frequently overlooked by planners who keep focusing on eventual benefits.

To deal with the benefits foregone when one changes from shorter return crops to management plans which include trees, we may need to develop new technically and socially appropriate ways to overcome local problems. In certain cases plans might include better alternatives for protecting trees, fertilizing fields, and providing income to those who forego off farm labor or must delay obtaining return from their investment, etc. Solutions may require associated project activities (carts for hauling fertilizer, new income generating activities for off-season income in the village, etc.) or may require risk guarantees or loans against future produce sales. Once the various potential local losses are identified with residents, management plans should focus on ways to minimize or eliminate the most important losses as well as maximize gains. Technical, social, and economic research is needed to develop ways to do this in FLCD for both short or long term benefits.

3. *Changing spacial characteristics of benefits* may also be found in forestry related projects. Spacial differences which cause imbalance between those who invest and those who profit are especially apparent in and types of projects such as woodlots, using rural land to benefit urban dwellers in need of fuel, or in watershed and other conservation activities which may take resources from one group because of the needs or desires of another. In the first case, income from the wood may be an adequate compensation, if other resources are available to assure subsistence needs. In the second, some outside form of compensation may be required. There is a case reported from a watershed project in India where residents of the valleys taxed themselves to provide a community development fund for farmers planting trees at higher

elevations in the watershed. This was a case in which local residents acknowledged and tried to compensate for the spacial difference between those who lost and those who gained from project activity. Although FLCD usually focuses only on activities which benefit the people who plant the trees, this spacial difference may arise. If the priorities for or benefits received by the trees is not high among local residents, incentives must be further examined.

In general then, the questions which need to be fully answered in relation to benefits foregone for local residents include:

1. What are the total benefits (including drought and social welfare insurance) currently available from local resources? How are benefits distributed? Are there major basic needs which are not being fulfilled? Whose?
2. What are the potential changes in beneficiaries from the available resources if the project is realized? Who will gain, and who will lose? How do the potential new benefits relate to local priorities and basic needs?
3. What are the added local investments in terms of time, labor, and funds and what are the risks (and perceived risks) required by the new activity? Who must pay these and who stands to benefit? Are the costs realistic (fair) in local terms?

These are complex questions and it is difficult to fully ascertain the information in short term project design. Yet, these questions must be considered if we are to understand the complex issue of benefits foregone.

Power Structure

One must not neglect to examine project activity failure as it might related to lack of support from one or another powerful person or group at the village through international levels. If one interprets the term broadly, one could look for "benefits forgone" to the powerful as a reason for FLCD activity failure. Let us identify and look briefly at some examples of the types of benefits which might be lost to these various figures.

Village elite. Local leaders may be in a position to control land not currently being intensively farmed. An ability to designate land use for specific persons or families may be an aspect of a leader's source of power, or it may be a way to obtain gifts or have residents owe labor or other obligations. On the other hand, the land which is not currently in use may in fact belong to the elite. Often otherwise unused land is used by the landless or landpoor in non intensive ways until the land has more value. Many examples are seen where the open land becomes the active property of the wealthy as soon as value, such as a tree plantation, has been added. If the elite were to truly lose control over the land for the length of time a tree related project requires, they might identify this as a benefit foregone to themselves and be unsupportive of the activity or co-opt the benefits.

Local Forestry Agents. Local agents often gain a substantial income from fines and taxes they informally levie on villagers getting wood etc., from the forests. Agents also get their own advancement and status evaluated on the basis of the more traditional plantations. They may not wish to take on the humble and unrewarded role of extension agent, helping local people raise trees.

3. *The Forestry Service.* The service, itself, also may gain revenue from lumber or from selling fuel, etc. This revenue not only may augment officials' salaries, but may give the service status in the eyes of national governmental administrators. Community forestry, on the other hand, tends to take investment and support away from the more generally rewarding commercial forestry production.

4. *Governments.* National governments may find export from grain, vegetables, lumber, and other cash crops essential for survival. To invest much scarce money and land in long term rural development may seem secondary to the more lucrative uses of resources when they are themselves in times of financial crisis.

5. *Research Institutes.* Topics of international interest to forest research deal with maximizing growth rates, not with the less prestigious pursuit of a tree or shrub which can offer local women tannin for their leather or berries for their children. These new topics of interest to FLDC also require collaboration of technical, social, and economic specialists in a way which may give the traditional technical researchers a feeling of losing turf.

6. *Donors.* Frequently donors find delays caused by the multidisciplinary nature of FLCD activity, and by the length of time it takes for visible results, to threaten their funding availability. Donors who need to demonstrate dramatic results in two or three year funding periods have a difficult time justifying selecting community level forestry over activities which have quickly visible results.

In order to deal with these types of benefits foregone, project planners must recognize all the actors potentially affected by a specific project activity. We need analyses of the power groups in various countries, identifying more effectively those who could afford most to participate. Designers must work closely with local people but also with the powerful, to see that those involved feel they are not threatened with more loss than gain by the success of a project.

Finally, there may be political situations in which the powerful would lose too much if projects succeed. We need to identify these environments and focus our scarce resources elsewhere.

Additional Useful Activities

Beyond or in conjunction with the research topics mentioned above, it would appear that several other activities might strengthen our ability to more clearly identify and analyze problems, and to design the tools for better projects. Examples of some of these activities are as follows:

1. We need *more in-depth sensitive evaluations* analyzing changes in benefits and of beneficiaries of successful projects. We also need to better document project success to give support to donors who wish to justify FLCD activities. Where people have not participated we need to identify if project failure was because of certain valued benefits which would be foregone with project success. Many of our evaluations stop at a superficial level. For instance, they find people have not protected the trees from animals but do not ask why. (They perhaps just advise fences.)

One interesting example of a benefit foregone to the forestry service was raised by Naronah. Instead of concluding the local population was not interested in planting trees themselves, he examined the potential for the problem lying with the forest service. The service might lose if local people chose to participate more, and thereby received a larger percentage of the profit.

2. We need *better social science guidelines*. I believe it is possible for social scientists to create much more useful tools for FLCD. One such tool, which will require the combined effort of social scientists and technicians, is collaborative planning and management agreement formats. I believe, since it is going to be impossible to learn all the details mentioned above about every potential community where FLCD could be implemented, we must design better tools for illiciting information from local residents and involving them in the design process. I believe also that social scientists can develop useful lists of potential social problems for various types of activities in differing social environments. This type of list could give project designers a better idea when social scientists should be involved in the project cycle.
3. We need *better technical packages* which appropriately address needs of local people. Technical research must respond to increased feedback from communities. On-farm research may be one answer to giving residents a more active control of the research topics and information, especially in locations where

established research institutions do not wish to deal with topics of concern to local residents.

4. We also need *better communications among those focused on these issues*. A first step is the kind of workshop you have provided, in which people from various disciplines and perspectives are working together to identify where our combined knowledge and experience suggests we should focus next. However, as the circle of those involved in FLCD widens we need better ways to make information from workshops and from field experiences more readily available to those it would help.

In answer to the question, why have we not changed our project planning to more adequately identify, measure, and maximize benefits gained versus those foregone? One can say that it is a very complex task. However, the first step may be just identifying and documenting how complex and important these issues are. Then we may have to recognize that there are always losses as well as gains when activities utilize scarce resources in the face of diverse demands. We need to concentrate on developing techniques to minimize benefits foregone while maximizing added valued benefits. Finally, we may need to make some policy choices as to whose needs are the most pressing.



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This brief report outlines some of the factors which Latin American campesinos and Indians probably would consider before and during their involvement in social forestry projects. Social forestry, or whatever term is eventually adopted, is understood here as the "management, for sustained yield and with local participation, of resources for production and distribution of forest products for domestic use and small-scale marketing for the benefit of the producers," a definition accepted by the USAID Communal Forestry Workshop July 1982.

Any program for initiating or increasing the villagers' participation in social forestry first must recognize that two gross geographical zones differentiate the landscape in Latin America, and that these will influence the design of any project. These are:

1. Moist tropical lowlands

In general, these are relatively sparsely populated areas where deforestation is a comparatively new phenomenon. In many areas, deforestation is underway and, in some, has produced serious degradation. But overall, the lowland still retains considerable forest cover. Here the general strategy for social forestry would be one which encourages rational management of existing

resources. Project designers should presume that residents have a certain degree of familiarity with and concern for forests and, that this knowledge can be tapped during project development and implementation.

2. Highlands of South and Central America

These areas are characterized by dense populations existing since pre-Colombian times. Severe deforestation has long been a problem; there is a scarcity of fuelwood, fodder, and construction materials, while severe erosion increasingly threatens arable land. Although in terms of general climatic conditions, the insular Caribbean basin is comparable to moist lowland regions, the demographic and land-use history makes much of the area characteristic of the highlands of Central and South America. As such, this region will be included in this section.

Unlike comparable zones in Asia and Africa, forestry departments in Latin America, with few exceptions, are relatively undeveloped and generally are not perceived as protectors of forest lands. But while villagers and foresters rarely confront each other over forest resources, neither do they work together to create them. In such areas, the overall forestry strategy would be one which encourages and supports reforestation by a population relatively unfamiliar with such programs and one where concern for trees is secondary to more immediate subsistence needs.

In the attached social impact analysis for Ecuador's Forestry Sector Development Project, this author reviews incentives and disincentives for a single country and with regard to a particular body of recently promulgated legislation. Nevertheless, the report considers factors related to forestry programs in each of the major geographical zones mentioned above and can be used to illustrate a sharply focused effort to evaluate ^{the} a social impact of a proposed forestry project. My purpose in this short report is to provide more general guidelines for each zone on a continental basis.

1. Tropical lowlands

In general, governments perceive lowland forest regions as zones of untapped wealth in terms of natural resources and agricultural development. Forestry development is thus translated to mean extraction of valuable hardwoods and replacement of forest cover with pasture lands. Reforestation is minimal and the long-range economic forecast for clean-cleared pasture land in lowland tropical forests is gloomy. Many residents in these areas are colonists who have recently emigrated from highland areas where subsistence and other economic needs were seriously threatened. Colonists, unlike government planners, usually realize that they have not arrived in El Dorado but rather, simply hope that they have come close to a more secure existence. Most, however, are unfamiliar with their new environment and while trying to adapt, they remain poorly equipped and rarely assisted. By contrast, long-term residents of the tropical forest, Indians, are extremely familiar with the environment, well-adapted, and, if left in peace, could exist quite well in the forest without destroying it. Demographic and economic pressures, however, mandate change. This provides enormous opportunities for social forestry programs.

Land tenure is usually the primary concern of colonists and Indians alike. Since development of such areas is relatively recent, colonists are anxious to establish their claims and Indians are worried that they will be dispossessed. The principal means for claiming and defending land is to demonstrate that it is somehow "productive," usually understood in terms of a market-oriented activity. For many, cattle raising is a means to lay claim to land by demonstrating productivity in an area with few marketing alternatives and by means of an activity where credit is most easily obtained. Many villagers, however, recognize the ecological and economical threat posed by cattle raising. Thus, where social forestry is recognized by authorities as a legitimate "productive" activity, and therefore a means to guarantee land tenure, one can expect acceptance and success of individual and community projects.

In sum, for most villagers, village level organizations or pan-village organizations in lowland South and Central America and the Caribbean Islands, the greatest incentive to become involved in social forestry lies in relating such projects to the process of obtaining title to one's land. The long-term security offered by permanent possession can override the temptation to reap high immediate returns from ecologically destructive activities.

Several strategies for realizing such initiatives are available:

a. Establish institutional relations by which Forestry Departments and Agrarian Reform Institutions collaborate to "reward" with land titles those who participate in programs of social forestry. This may prove difficult, as the overall goals of each institution often conflict, or the institutions themselves frequently compete.

b. Empower Forestry Departments to assist in the demarcation and titling of land, a notoriously prolonged process in most Latin American nations.

c. Institute alternative, quickly-obtained forms of titling (e.g., provisional titles, certificates of possession) for those who adopt forest resource management programs. Subsequently, one can make formal titling contingent upon demonstrable participation in projects involving social forestry.

d. Provide incentives to lumbering concessionaires to deal directly with landowners (i.e., purchasing cutting rights from individual landowners or communities rather than from state-assigned concessions), thereby encouraging companies to promote the land-titling essential to such work.

e. Adoption of any of the above must be complemented by a local-level promotional campaign. Such efforts, like any government agency initiative, most likely will be viewed with suspicion by potential local beneficiaries, an attitude often justified by experience. To minimize local suspicion, agencies often employ a few campesinos and/or Indians to act as promotional agents. While such individuals may be more effective than urban bureaucrats, they are often viewed with equal suspicion, and even jealousy.

By far, the most effective method of encouraging participation in social forestry is for the implementing institution to work directly through legitimate, locally-elected, grass roots organizations. Such organizations, particularly those which arise among Indians, have been growing in size and power over the last 20 years. They are the most effective means of transmitting information and stimulating discussion at a local level. Conversely, if such local organizations are neglected or circumvented in any program which effects the people they represent, opposition based on resentment can be expected. In brief, one of the greatest incentives for local level participation and forestry can be the acceptance and promotion of such programs by grass roots organizations.

The incentive provided by secure land title, however, is indirect. Land titling alone does not answer the question of why one would become involved in wood lot management or other forms of social forestry in tropical lowlands where, in general, there is not a perceived scarcity of fuelwood and fodder and, in turn, several alternative economic activities. To develop direct incentives, one must distinguish two segments of tropical forest populations:

- a. Colonists and those Indians with relatively high involvement in the national economy;
- b. Isolated Indian populations with lesser involvement in the market economy.

a. Individuals closely tied with market economies cannot be expected to devote time and land exclusively to activities for which returns will not be realized for 5 to 15 years. Most people in the area lay claim to arable plots of limited size (e.g., 50 hectares) and must obtain maximal benefit from these holdings. Forest management, therefore, must be combined with another economic activity which produces^a more immediate cash return. It is unlikely that trees and cattle will be combined; the root structure of most tropical forest species is lateral, and when isolated in a relatively open field, can easily topple in violent storms, endangering valuable cattle. A number of experiments designed to combine bovine livestock with forestry are mentioned in the Proceedings of the

Workshop on Agro-Forestry in Latin America (Turrialba, Costa Rica: Catie, 1979) but none are described as successfully operational. Several began with cattle, but subsequently shifted to pigs.

To make the long-range benefits of afforestation or forest management compatible with immediate economic needs of small holders, some form of agro-forestry is the best incentive (agro-forestry is understood to be a combination of forest and agricultural crop production, either in sequence or in rotation). A number of programs already exist and can be used as models (see Catie, 1979). A number of other, local initiatives also exist.

To stimulate interest in agro-forestry within tropical lowlands, one must diminish or compete with the two existing incentives to cattle raising--1) easy access to markets (cattle can walk to them) and 2) credit (Latin American and international lending agencies have made credit easily available for cattle production). Several possibilities can be suggested.

1. Establish special credit programs with long-term repayment for those involved in agro-forestry. Such programs will require careful design, for credit is often extended only to those with land title, something which has already been identified as a scarce resource in the area. A program which included both credit and provisional titles would provide incentives to both adopt and carefully manage an agro-forestry system.

2. Promote tree species which will lead to rapid economic return.

This can be done either by

- a) Rapid growth wood producing species
- b) Fruit or other food crop producing species.

3. Combine trees with relatively high value food crops (beans, peanuts, cacao), thereby helping to balance the expense of marketing agricultural goods.

4. When feasible, promote infrastructural development (e.g., roads, riverine transport) to lower the cost of transporting goods to market. This could be quite easy in lowland areas laced with rivers and linked to a major marketing area.

5. Tighten credit available for cattle raising while loosening that for agroforestry-related activities.

6. Promote, or at least do not discourage, partial use of land holdings for individual polycultural swidden plots. One cannot expect individuals to become involved in new, experimental activities at the risk of the subsistence security provided by such plots.

7. Observe and, whenever advisable, incorporate existing local experiments in agroforestry into larger development schemes. A number of activities which could be called agroforestry have been developed locally in lowland Latin America. It will be far easier to convince local people to technologically improve their initiatives than to attempt programs when no interest yet exists. In turn, successful, improved local initiatives could serve as excellent models to provide incentives in other areas.

8. Consider tree species which have local as well as national market value. In tropical lowlands there is frequently a tendency to encourage growth of species which have industrial value. However, there are often "prized" species which can be sold locally. Knowledge of such local needs can easily be obtained by social scientists or anyone sensitive to local needs and capable of eliciting information from natives.

b. Very few, if any, isolated indigenous groups in Latin America are totally self-sufficient or independent of national market systems. Involvement is simply a matter of degree. Those on the lower end of the scale are usually less constrained demographically and therefore able to take maximum advantage of forest resources for subsistence. They nonetheless make regular purchases (tools, cloth, cookware) and are equally concerned about their land tenure. They therefore require some access to cash and some way to demonstrate that their land and resources are not frozen from national development, so they will be receptive to schemes which provide such perceived "benefits" yet do not demand time and resources which are primarily dedicated toward subsistence activities.

Recently, several experiments which focus on "improved natural regeneration" are underway. These are minimal maintenance programs which harvest high value hardwoods and encourage their natural regeneration by periodically eliminating some competitors and vines which impede natural growth. Such programs require relatively extensive plots, regular but not daily care, and little capital input from the implementing agency. They, however, are capable of producing high value woods in relatively inaccessible areas with very limited labor and other economic input. Such systems are economically attractive to forestry departments overburdened with activities in other areas. And they are extremely attractive to indigenous people who desire some involvement in the national economy but who prefer living in area with extensive wilderness. Moreover, indigenous forest knowledge provides them with concepts easily modified to adapt to the techniques of improved natural regeneration.

In the author's opinion, consideration of the incentives and disincentives ^{listed} _{below} is sufficient to initiate successful programs of rational natural resource management in lowland tropical areas. However, considering the actual and perceived scarcity of public services in such regions, additional incentives could easily be provided by including schools, health centers, and marketing resources in or near project areas.

2. Highlands of Central and South America and Comparable Zones of Insular Caribbean Basin

These regions, the sites of long-term and extensive deforestation, are areas of primary focus for social forestry, which can provide fuelwood, fodder, and erosion control where they are badly needed. With regard to the incentives and disincentives in these areas, six general considerations by campesinos and Indians will weigh heavily in their decision to become involved or not involved in any program.

1. Fuelwood, fodder, and wood for construction are perceived to be scarce, but so is land suitable for agriculture. If one is deciding to

produce wood or food, food will predominate. Projects, therefore, must be aimed toward land not used for agriculture. However, in many high altitude settlements, wind and other climatic conditions currently prevent agriculture on utilizable soil. By combining agriculture with trees which serve as wind-breaks or other forms of protection, such land can be farmed or improved for pasture. In such cases, programs of social forestry would be quickly accepted.

2. The most logical location for individual and community wood lots is on land unsuited for agriculture; this usually means highly eroded or eroding gulleys or high mountain regions.

Gulleys are often individual property. Uplands, however, are usually understood to be communally owned. These areas often do not have legal title. Land tenure thus becomes a major consideration.

a. As an incentive, communities may hesitate to become involved in any activity which visibly increases the value of land previously viewed as "worthless" by those elements of the national society who have previously usurped much of the valuable arable lower regions. Improvement, therefore, could be seen as an invitation for usurpation.

b. A land titling component, utilizing the strategies mentioned above, would serve as an incentive to diminish such fears.

c. Cernea's study of Pakistani land tenure and forestry development (World Bank, 1981) illustrates that land, ^{sometimes} defined as communal land "in real life is operated and used as private land." Similar problems exist in Latin America. Support for projects which utilize hypothetically communal land could serve to solidify private claims, support individual efforts to seize public lands, divide the community, and thereby create animosity toward the project and those who implement it. A full understanding of local land tenure and efforts to reduce fear of land loss are essential for any programs in social forestry.

3. "Worthless" upland regions (i.e. those usually considered as locations for social forestry projects) are, in fact, often sites for extensive herding of sheep, cattle, llamas, and/or alpacas by community members who maintain traditional claim to this land. To plant such land in forest could remove essential pastureland.

However, unlike parts of Africa and the Near East, ^{widespread} agricultural and herding groups are different, Highland Latin American communities combine both activities and could be persuaded to plant part of their land with trees. This would be accomplished by fencing off pastures until the trees were tall enough to escape being consumed as tasty fodder. This, however, requires considerable community agreement; one disgruntled herder could eliminate an incipient wood lot with a pair of wire cutters. The community solidarity needed to prevent such acts rarely exists. Thus a regular promotional campaign should be maintained long after the forestry program has been initiated.

4. Even where land is available for forest production, the busy schedule of activities and complex juggling of priorities by Indians and campesinos may make them hesitant to become involved in any activity for which no return will be noticed for several years. To provide incentives, forestry departments and private forestry programs should be encouraged to assist local communities and to prepare written contracts with communities and/or individuals. These contracts provide essential guarantees against suspected land seizures. To provide additional incentives, contractors can agree to employ local labor in the preparation, planting, and maintenance of forests. Although this may reduce the individual's or community's percent of return at harvest, the immediate economic incentive of employment often outweighs concerns over eventual returns.

5. Hoskins has demonstrated that in Africa the role of women is critical in the acceptance or success of social forestry programs. The same is true for much of Latin America. Women are customarily those who gather firewood

and fodder, and prepare meals for which certain types of wood are preferred or despised (for such reasons as their ability to produce sufficient heat or transmit certain odors to the food or household). In brief, women have a special concern and knowledge regarding firewood and can be expected to provide interest and information concerning any program of social forestry. However, as with most social science research, social impact analyses are undertaken by men, and information and opinions are solicited largely from men. Projects concerned with social forestry must eliminate this bias and work intimately with women. Their concern and interest can provide invaluable incentives for accepting such programs.

6. Social relations throughout Latin America are characterized by asymmetry, hierarchy, and unequal distribution of wealth. Such differentiation is most acute and historical in the highlands of Central and South America and the insular Caribbean. For 450 years, social elites have become established largely by exploiting the labor and seizing the land of campesinos and Indians. Indians and campesinos are acutely aware of this. And they are suspicious of any program designed by those elements of the society identified as part of the ruling elite. Even without such a long and tragic history, rural villagers' experience with development initiatives over the past 20 years has been far from positive. Thus, regardless of the excellent design of the project and the good intentions of the development agency, the agency can expect to ~~CONFRONT~~ either apathy or hostility if it is perceived as either exploitative or paternalistic.

Efforts to sensitize forestry agencies to local social needs and fears are important. However, it must be kept in mind that a "sensitive" agency can nonetheless be perceived as paternalistic; from the viewpoint of the recipient, such asymmetry can be seen as capable of altering programs by capricious and potentially threatening decisions. To obtain campesino and Indian support for programs which, like social forestry, permit access to

local land and resources, the best strategy is to incorporate rural people as groups into the decision-making. This is a difficult and often time-consuming experience in cross-cultural collaboration. Collaborative social forestry projects, however, stand a far greater chance of success than those in which the implementing agency simply attempts to force or convince the potential beneficiaries to comply. Several efforts can stimulate this sort of collaboration:

a. Work through legitimate grass roots organizations which represent interest beyond the range of a single community. Agency-selected "pilot projects" are often perceived as "special favors" to single communities. Jealousies can prevent future expansion. By working with existing pan-community organizations, overall goals can be explained and the location of pilot projects can be jointly determined and thus more acceptable and, in the long run, more accepted.

b. Promote seminars which bring together agency technicians and local individuals. Indigenous knowledge can be enormously helpful in the design of projects. Recognition of local contribution, in turn, will assist in their reception by communities.

c. Allow local organizations as much control as possible in the implementation of projects. Government agencies are most acceptable to communities when they are viewed as resources which can be tapped when needed, rather than institutions which impose their will from above.

The brief comments cited above are understood to address the need to implement programs of social forestry which are seen by the author as generally essential and beneficial to Latin American campesinos and Indians. The suggestions are premised on the belief that social scientists must make positive suggestions as well as recognize negative impact.

A Typology of Social Forestry Projects--Where to From Here?

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A quick review of US AID, World Bank and Resources for the Future publications as well as numerous articles suggests that there are five general categories of "social forestry" projects. Such projects are:

- 1) pasturage and common lands
- 2) agro-forestry
- 3) village or individual woodlots
- 4) plantations
- 5) watershed management/erosion control

Each of these categories of projects can generate benefits at both local and extra-local levels. The benefits are not limited to socio-economic activities; they also include environmental and political benefits as well. At the same time, economic factors as well as environmental and social conditions vary greatly from project to project and ultimately determine the success or failure (defined here as equitable distribution and rational use of forest resources for sustained yield) of a given project. Success may not depend upon projects being locally administered, but it will depend upon the generation of visible and financial rewards.

The important factors shaping projects in any of the five categories are generally thought to be:

- resource endowment and climate
- population density
- dominant agricultural activities
- land tenure
- level of economic integration
- dominant source of household fuel
- local forest management practices
- local ability to process wood products or to sell them to other processors.

The projects within any of the five above mentioned categories vary tremendously depending upon their scope. They will generate different costs and benefits, locally and extra-locally, and have variable chances of success depending upon their scale.

Regardless of the category of social forestry project, administration can vary between the extremes of central government or local village planning and management. Projects can be administered directly by the forestry department or by the local village, with or without cooperation or consultation from the other. Projects can be one component within larger integrated development projects or they can themselves be multi-purpose projects devoted to many different aspects of social forestry.

Let me now discuss each of these categories of projects in terms of goals, benefits and costs.

1. Pasturage and common lands.

Social forestry projects in this category would fall into two categories. First there are the projects that attempt to maintain or improve common lands and pasture through the introduction of better management techniques, select planting, and alternative projects to take the pressure off these areas. Second, there are projects that attempt to upgrade common lands through vast replanting efforts, or reduce pasture needs by planting trees that provide fodder for livestock.

Land tenure is crucial to the success of any of these projects and is directly related to the strength of village organizations to plan and/or manage these projects.

2. Agro-Forestry

These projects all represent attempts to find permanent combinations of trees and food crops (annuals, fruit trees, or nuts) that increase yields of food, fuel, fodder for livestock and materials for shelter. Tropical areas that have environmentally sound agro-forestry systems in place also provide more game per hectare than primary tropical forests.

In Asia, the intensification and stabilization of agricultural land-use in forest areas enriches the soil through the inter-planting of leguminous tree species, thus providing for the subsistence needs of small farmers in the short-term and more fertile lands in the long-term.

Agro-forestry projects need not be undertaken as entirely separate projects. In Asia and Latin America, on both public and private lands, landless cultivators have been employed to plant cleared or primary forest areas with seedlings of valuable species. In return for their labor, these cultivators are allowed to interplant the areas with subsistence and cash crops for two to three years. In some cases they are allowed to continue to plant the areas on a rotational basis that runs a cycle every 10-30 years depending upon the location. Depending on the labor requirements and the length of tenure, however, these labor arrangements can be extremely exploitative and may not provide the equitable distribution of benefits desired from social forestry projects.

In sum, all agro-forestry is marked by extreme cultural and ecological diversity. As the 1980 AID Policy Background Paper Development Assistance in Forestry states, "The improvement of unique traditional patterns of local crop and tree cultivation--possibly representing the most efficient and ecologically sound use of resources--will require site-specific trials with exotic as well as local species."

3. Village or Individual Woodlots

These projects have usually focussed on the planting of one or two varieties of trees in a relatively small area (1-5 hectares) in order to meet the fuel needs of the community or to contribute to the regional fuel supply through the sale of wood. Plantings can also occur in small clusters, along roadsides, fences, houses or irrigation boundaries. Plantings can utilize local varieties and production need not be limited to fuelwood, but these solutions are probably more associated with locally planned and administered projects than with ones designed by forestry departments. Likewise, benefits can include the production and/or sale of local building materials (either poles or sawn lumber), charcoal, artwork, crafts and furniture.

While much emphasis has been placed on planting woodlots (tenure conditions of course would determine the choice of individual or community foci) some attention should be focussed on maintenance of existing woodlots through improved managements techniques, including selective trimming and planting practices to upgrade the forest.

It is safe to say that most community or individual woodlots in the world have never been visited by technical personnel. A two-way flow of information from such visits could be mutually beneficial.

At the very least, woodlot projects can make villages or individuals self-sufficient in fuelwood and probably save a lot of time and energy in the process. Although there are few technical problems associated with woodlots, there are problems concerning land shortages, legal questions of tenure, protection of the areas once planted, and equitable access in the case of communities. For community woodlots, a strong local organization is needed to administer the project. Often such organizations have been undermined as national governments attempt to centralize power and planning activities.

4. Forest Plantations

Large-scale plantings, public in most parts of the world but also private as large subsidized estates in Brazil indicate, usually represent massive, top-down government attempts to meet future wood needs on a sustainable basis. Normally, fast growing, exotic species are planted under the supervision of national forestry departments, using local wage-labor. All trees are utilized and areas are immediately replanted.

Plantation forestry projects generate employment, increased firewood supplies, alternative wood supplies that help to protect natural forests, and future wood needs. The plantations can also provide pole wood and pulp material.

Planting can be undertaken on areas that had previously been forested (reforestation) or areas where there never were forests (aforestation). Plantings can also be aspects of massive watershed or erosion control projects.

Although agro-forestry programs could be run jointly with the establishment of plantations, questions of land-tenure and equity would arise immediately. Therefore, plantations do not appear to be particularly appropriate projects for "social forestry" although plantation projects could certainly include social components. From my reading on the subject (that is as a non-forester) it appears that plantation forestry is what most forestry departments and international forestry training have been geared to. That could pose difficult problems for the implementation of "social forestry" projects through these institutions.

5. Watershed Management

A major purpose ^{of} forestry projects is to promote rural development and raise rural incomes. Thus we are getting away from "timber only" projects. One of the best ways to promote rural development or raise incomes is by protecting or improving soil fertility and the year round flow of water.

In some headwater areas, watershed or erosion control are the sole purpose of these projects. More often than not, however, watershed management and erosion control are important components of any of the four previously described social forestry projects. Except in the most fragile environments selective cutting or even agro-forestry can be undertaken.

Social forestry projects, it seems to be agreed, should generate increased income over sustained periods/^{for local populations}, involve local participation in planning and management in order to ensure success, and maintain the environment. These goals are accomplished through agriculture (the production of maize, beans, manioc, etc. either during the establishment of forests or in slash and burn rotations), [✓] or through the production of food tree crops (coffee, tea, palm oil, nuts or fruits), industrial tree products (rubber, gums, resins), fuelwood, saw wood, pulp, or fodder for livestock.

Social forestry projects also have other spinoffs. Increased supplies of wood can stimulate cottage industries (crafts and furniture) and the production of art. Soil fertility increases, erosion decreases and manure can be converted from use as a household fuel to fertilizer for agricultural production.

Of all the projects that might be defined as social forestry, or more likely those that include social forestry components, agro-forestry is the one type of forest project--coming up in each of the five categories--that offers the best chance of generating income locally, fomenting local participation and ensuring that social forestry projects are successful. To date, most knowledge of agro-forestry is unknown to national governments, forest departments of

developing countries, or international development organizations. These centuries old systems of management and rational resource utilization are undertaken locally, with constant experimentation that is supported neither technically nor financially by states or development agencies.

As we attempt to understand the complexities of appropriate agro-forestry management systems in tropical forest areas, we need to systematically review the state of knowledge regarding indigenous models of land use as well as their potential application to current needs. Indigenous land use systems provide models of integrated ecological management. Native peoples have developed site-specific sustained yield systems that combine the cultivation of pasture, roots and other crops, forest management, hunting, fishing and gathering. Characteristic of these systems are the integrated use of distinct habitats and ecological zones, of mixed management strategies within zones, and of diverse species (both cultivated and gathered). The models can provide important clues to the linkages between ecosystems, as well as essential background information for the design of appropriate prototypes for tropical forest exploitation.

Shifting cultivation is now generally seen as a valuable and productive farming system of sustained yields under conditions of controlled population density. Because it neither requires clear cutting nor interference with root structures and soil, recovery of the ecosystem is facilitated. It is also well-adapted to low technological levels and efficiently combined with hunting because secondary forests produce more animal resources than primary forests. Intercropping of diverse species, particularly in SE Asia, proves to be more biologically dynamic than monocultures and protects the soil and annual ^{crops} through the maintenance of a canopy. We do not know the potential of shifting cultivation systems for different population densities or carrying capacities. Nor do we

know how to integrate information about individual agro-forestry strategies with Western knowledge to improve their efficiency (in terms of generating income, increasing carrying capacity, or protecting the environment).

Many systems of shifting cultivation include tree crop management. These systems maintain much of the stability of the original forest and can serve as models for small-scale agroforestry projects. They can also provide clues to tropical forest succession.

Many indigenous management practices maintain, instead of removing, forest cover, and maximize available protein sources and dietary diversity. Indigenous knowledge of wild plants can potentially contribute to the existing repertoire of plants for both food and medicinal purposes, and at the same time provide alternative sources of income. Indigenous forest management often includes an understanding of the interrelationships between forest and aquatic systems, whose importance has recently been recognized by outsiders. Understanding of these practices can provide a basis for improved methods of exploiting the abundant fish populations in tropical ecosystems.

Perhaps the final and most important point to stress about agro-forestry social forest projects is that they will have to involve, from the outset, the local inhabitants in planning and implementation. Old style, top-down projects will nearly always fail. Initially, agro-forestry projects should be approached by forestry departments and development agencies more from the point of view of learning about what already exists on the ground, finding out if Westerners or national planners' knowledge of forests can improve local agro-forestry systems, and finally/collecting and disseminating analysis of these indigenous systems to see if they are useful down the road in the same country or in other regions of the world.

**Institutional Constraints in
Social Forestry Programs**

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This note deals with some of the more obvious and/or important institutional factors which constrain the appropriate development of social forestry activities and programs. Because of the somewhat vague nature¹ of the principal term we begin by defining what is meant by "social forestry" in this context. This is followed by a brief look at the circumstances surrounding the recent substantial resurrection of interest in the topic. With this as background, the pertinent institutional constraints are noted and discussed.

Social Forestry

The term social forestry is here used to define and include those forest related activities which are either specifically undertaken to produce, or which otherwise result in, a sustained positive outcome, realized in as direct a fashion as possible, for the major section, or a substantially large part, of a community.

Some of the qualifications need expansion.

1. ...a sustained positive outcome. The term "sustained" suggests a greater than short-term outlook or appreciation. Too often, our evaluation horizons for development projects are overly short-term. Apparent successes later disintegrate, not only because of harder scrutiny, but because of policies which promote initial successes at the cost of, or which inexorably lead to, subsequent shortcomings.
2. ...realized in as direct a fashion as possible. This is a defense, amongst other things, against the trickle-down. The more direct and

¹The term is also misleading: is there, by the same token, an antisocial forestry? There certainly is, but not in the sense directly antithetical to the one in which proponents of "social forestry" use their term.

uncluttered the route from effort to benefit, the greater the "social" nature of the forestry activity. Three dimensions are covered by this, ceteris paribus. The dimension of space argues for the benefits to be locally received, and not channeled to or re-directed from other localities and regions. That of timing promotes an awareness of the potential, (inadvertent) loss or dilution of benefits from a circumlocutious timing process for receiving them. For example, consider a scheme to help a locality develop through an arrangement which first calls for it to produce and export forest items on a currently adverse price basis, but with the promise of sharing in the expected long-term benefits of national development, caused in part by such exports. As far as social forestry is concerned, this would be far less preferable than a simpler, smaller, and potentially less rewarding scheme, yet which nevertheless planned for more immediate and direct benefit. Finally, the dimension of directness refers to the desirability of beneficiaries of social forestry programs receiving their gains in the most straightforward way possible. By this tenet, the number of intervening social groups or classes through which the benefits flow should be minimized. Projects would be sceptical of calls to help small segments of society benefit immediately with the expectation that sometime out of such localized prosperity would come some common good for all.

3. ...for the major section, or a substantially large part, of a community. This is another precaution against accepting trickle-down development. Forestry activities would only have the prefix "social" added to them when it was seen that ensuing benefits were clearly available to broad sections of the community, and not only to narrow fragments with the

theoretical hope that some of them would ultimately sift down to larger cross-sections. The incidence of success or achievement in a community would have to be considered, and not only its presence.

The main advantage of casting the definition of social forestry in these terms, i.e., those of social outcome, and not of product, process, sector or activity, is that it does away with the need to specifically either include or exclude parts or the whole of these various dimensions of forest activity in the definition itself. To the extent that it succeeds, the definition is less cumbersome yet more powerful. For instance, as construed, it potentially covers the whole gamut of forest activity, from all types of production (fuelwood, wood products, non-wood products such as seeds, agro-forestry, etc.) to environmental protection, to forest resource and wild life conservation. Similarly, it theoretically includes all those individuals or activities with any dealings with forestry--small or great, direct or indirect, integral or marginal. In both cases individual inclusion or exclusion under "social forestry" depends solely upon the ability of the factor concerned to meet the requirements of the definition. As this will naturally vary from situation to situation, a separate appreciation would have to be made in each instance. A possible result is an increase in precision, for items would not be pre-classified in a static fashion, but judged dynamically on the basis of an accepted definition.

The definition of social forestry in this manner would still include all the desirable elements explicitly enumerated in the more categorical definitions, e.g., an attention to ecology, the encouragement of people's participation in the management of forest resources, etc. Forest activities which delivered the sustained positive outcomes called for in our definition would need to be ecologically sound. Also, it can plausibly be argued that direct benefits accruing to the majority of people in society would not be possible in the absence of genuine participation.

On the other hand, it is quite easy to observe many large commercial forest enterprises which may be ecologically sound, but which may hardly be titled social. Another attribute of this way of defining social forestry is that, in addition to ensuring that desirable elements are included under the term, it guarantees that items are not precluded without specific consideration, just by dictat so to speak. For instance, definitions which limit social forestry activities to the production of forest goods for domestic use and small-scale marketing demand a blanket exclusion of larger enterprises. Yet it is very conceivable that many medium-scale, and even a few large-scale, operations could be closer to being social forestry as we have defined it than other smaller forestry enterprises which are small in scale but not socially beneficial by nature. A similar stress on communal and cooperative production in other definitions overlooks the fact that these organizational forms may quite often be socially detrimental. And so on.

Evolution/Resurgence of Interest in Social Forestry

The notion of what is appropriate and beneficial in the proper management of a country's forest resources has been undergoing a steady change for some time now. Previously, and until fairly recently, a national approach contained two elements. The first was production--forests were principally regarded as sites of raw material for the many wood products nations demanded. The second was conservation. Partly due to the desire to maintain an adequate supply of the former, and partly for recreational purposes for the few in society who were privileged to own and/or manage them some attention was paid to conservation. Because of relatively low levels of production, however, and the comparatively benevolent people to forest land and resources ratio that prevailed at those times, neither objective presented a particular social problem.

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The present situation is vastly different. The fundamental problem is deforestation--trees are disappearing over the face of the planet at an alarming rate. There is a debate about the many causes for this, especially about the place of population growth in the deterioration, but a number of reasons seem generally accepted. These include legal as well as illegal encroachments in an effort to increase agricultural land, and overcutting by industrial producers and poor agriculturalists alike. Whatever the causes of severe deforestation, national governments in LDCs have been forced to take note of it, because of the close links of forests with all sectors of agricultural activity, beginning with water and soil. In addition, there is the very present fear of running out of fuelwood for many of the world's poor. Finally, governments of industrialized countries are also concerned, in addition to those of LDC, because forests provide raw material for products for which there is increasing world demand. Their strategic value lies in the fact that they do so as renewable resources, and there exist very few prospects for replacing or substituting them with economically and environmentally competitive products.

Out of all this has come today's interest in social forestry. It is accompanied by a change of approach to the whole question of national development. The concern with production and productivity has been expanded to include basic human needs. In forestry's case, this means that people, and not trees, will now be the center of forest development. This is another very appropriate way of defining social forestry.

Institutional Constraints

There are three broad categories of institutional constraints which have the potential to negatively effect social forestry programs. Organizational constraints

afflict the many different types and levels of organizations which deal with social forestry; policy constraints result from or in various socio-economic policies developed and implemented by the organizations; and system constraints, or boundaries, are imposed by the social systems in which the organizations operate, on all social activity within their purview, including forestry.

Organizational Constraints

A very large number of organizations deal with or otherwise affect social forestry programs and projects. They are international, national and local; represent government, private sector/industry, cooperative, local/traditional and other interests; and relate to a whole range of potential activities such as, for instance, credit, marketing, R&D, etc. Table 1 gives an idea of some of the types of organizations involved and their various functions. The first set of institutional constraints then deals with problems faced by all organizations in their day to day operation. These would not be unique to social forestry, but would affect such institutions also.

First, there are constraints stemming from problems with organizational structure. Representative issues here would be the effects of over-centralization and/or decentralization on organizational performance; whether institutions were appropriately and/or adequately designed as far as their levels, channels, and functions were concerned; the nature and effectiveness of their linkages; etc.

A second group would deal with what have been termed supporting behavioral conditions for organizations.² Questions about the type and adequacy of leadership would be entertained in this context, or those related to the place of people's participation or the lack thereof in forming or neutralizing institutional constraints.

²Esman and Uphoff Rural Local Government (#19).

An examination of the elements of institutionalization, or conflict resolving mechanisms within organizations, would also be part of this process.

A potentially special area within the boundaries of supporting behavioral conditions is that of bureaucratic re-orientation (BRO). This deals with the make-up of bureaucracies, and the place of their current orientation and beliefs in bringing about, or at least not preventing, many contemporary development problems. Some examples are the common equation of expenditure levels with results, of education with superiority, and projects activity with development. A change in such values would obviously benefit the cause of development and this is what BRO seeks. A number of means and methods to instill and nurture such change are suggested by proponents of BRO. Heavy emphasis is laid on amending bureaucratic processes and reward systems in this endeavor.³

While BRO is obviously applicable to most if not all bureaucracies and bureaucratic systems dealing with development, it has a particular relevance to forest bureaucracies. Forestry officials and agencies in LDCs, especially in the many with colonial pasts, have a philosophy which is often far from development--or people--oriented. The concepts and practice of BRO are therefore especially pertinent to social forestry and a successful attempt in this area could conceivably remove or modify many institutional constraints to social forestry.

Policy Constraints

With such a large number and variety of organizations involved in social forestry, there must also be a substantial number of constraints imposed upon desirable actions and outcomes by faulty policies of different types. It is beyond

³Korten and Uphoff

the confines of this note to go into them in detail here, but we will identify a few major groups of policies with common ill-effects.

Policies which tend to favor the already advantaged. This is a commonly observed phenomena in development practice and so does not need great elaboration. It is frequently observed that despite all plans and efforts to the contrary, the already privileged in communities and between regions are much better able to take advantage of measures and programs meant primarily for the underprivileged. This would be a major institutional constraint in social forestry, as it is elsewhere, and would need to be addressed.

Policies which stress urban, over rural, areas and interests. This is the (in-)famous "urban bias", which appears to be as unavoidable as the bias discussed above. To the extent that this exists in relation to social forestry, it would need to be examined for causes, and potential remedies sought.

Policies which invariably and inadvertently displace labor. Only too often, one of the more unfortunate side-effects of many agricultural policies is to displace labor, thereby putting a further strain on employment. Policies which knowingly (or worse, in a sense, inadvertently) promote this, represent formidable constraints to rural development in most instances. These constraints should be traced in the context of social forestry.

Policies which concentrate instead of re-distribute income. This pitfall is also well known and self-explanatory. We have touched upon trickle-down earlier.

Policies which favor the use of "external" resources and benefit "external" parties. Very often there is the surface hum of development in a region but no benefit accruing to anyone locally. This occurs when external interests

with design on local natural or prime resources (including labor) move in, sometimes clearly temporarily, to exploit the latter. While the exploitation is in progress, there are nominal signs of growth and development. But because the investment is from outside the region, the returns leave the area also. There is no local re-investment or local interest. The tragic irony is that many-development plans and programs fall into this pattern almost without noticing it, or seeming to be concerned. Since, as was mentioned, most examples of this type of constraint are natural resource (raw material) related, it might have special meaning for social forestry activity.

System Constraints

The term system is used here to denote social systems, or basic forms of human organization and activity. Institutional constraints identifiable at this broad level of analysis fall into two main categories. Structural constraints are those levied by the structure of society at any particular time. Systematic constraints are those imposed by the normal workings of any social system on its constituents, manifested either through and/or separate from the structure.

Structural Constraints

The best example, probably, of structural constraints in agriculture, including forestry, is that related to land ownership and tenurial relations. In most developing countries (and, for that matter of fact, also most advanced agricultural ones) a comparatively small number of people own most, or substantially most, of the land. At the other end of the scale there are those with no land at all. In most LDCs the latter constitute upwards of half of the rural population. This structural imbalance leads to all sorts of problems, and a common rallying point

as far as a solution is concerned is the call for "structural", or a serious land/agrarian, reform.

Structural constraints abound in forestry. Most of the people who depend on forests either directly or indirectly, do not own them. One of the reasons given particularly often for the extensive degradation and/or deforestation taking place currently is that the perpetrators are unconcerned by social, or by longer-term, considerations, because they do not own the resources they exploit and destroy. Conversely, owners of forests who are not allowed by national law to either exploit at all, or to adequately exploit, their property, also do not have an incentive properly maintain and cherish the resource. Such issues, and the many other related ones pertaining to structurally derived institutional constraints, would form an essential part of an inquiry into social forestry.

Constraints of Social Systems

Structural constraints are in one sense the clear or overt manifestations of systemic operations and constraints. All forms of human organization and association have some very basic ground-rules. These are generally many, varied, complex, and horribly intertwined, so that trying to distinguish and make sense of their many effects is a formidable task. Social structures, as one set of the more apparent results from the operation of these rules, are an aid to understanding society. But by themselves they are not sufficient to the effort of grappling with reality as perceived, and of comprehending it. For that we have to confront the systems themselves.

A follow-up to the structural constraints discussed above will both clarify this point and assist in the discussion of system-related institutional constraints in social forestry.

Suppose that, against all odds, a country was able to carry out a serious and genuine land reform. The structural constraint in the system would have been destroyed and all cultivators would be landowners. But, assuming a social system of agrarian capitalism, the tendency, right from that moment, would once again be towards agglomeration and concentration. The normal workings of the system would mitigate towards a retrogression in these terms, towards a situation where the previously skewed structure would be replicated and land reform again needed.

The point here is not whether or how capitalist agriculture leads to concentration in land. It is to show the separation and yet the interconnection between structure and system. The tendency to concentration, or the lack of it, is one important dimension of the normal workings of any social system. Whether it's there or not in agriculture based upon the principle of production for the market on private property is not as important, in our context, as the principle of the need to analyze social systems, in their own terms, to see what might be expected from them through their normal workings. The need to understand the effects of private ownership of resources, and private production, upon forestry, is as important as it is for other rural endeavors. Ideally, concurrent similar analyses of other forms of social organization and their potential systemic constraints on forestry would be most useful from a comparative viewpoint (e.g., systems of self-management, and/or Chinese socialism).

The concept of system-derived institutional constraints can be related to the other organization and policy, constraints we have mentioned. This is not surprising, if, as is argued, the basic form of human organization-- the essential rules of the game so to speak--has a place in determining, to a greater or lesser extent, what goes on in society. Thus both organization and policy are linked to system.

Opening up the systemic dimension has some rather interesting effects on our earlier discussion. For instance, viewed in the context of social systems, BRO loses a bit of its polish. If we assume, as we must, that bureaucrats behave the way they do because it makes eminent sense for most of them as individuals, given their social reality, then re-orienting them will be a difficult, thankless, and also largely hopeless task, until and unless that reality is itself also re-oriented. BRO then becomes a matter of not merely pointing out shortcomings or imperfections to sensitive people in a benign way in order to make them see reason, but understanding what it is in their social framework which makes the pursuit of their individual well-being antithetical to that of the people they ostensibly serve, despite their understanding of the situation, and sincere personal desire for it to be otherwise.

In the same vein, looking to the policy constraints covered earlier, it is an interesting question whether, for instance, it is policies which tend to favor the already advantaged, or the social system which does it; whether the "urban-bias" is policy or system fed; whether income inequality is policy or system fed...etc.

Conclusion

As defined and discussed, institutional constraints will play a major part in the success or failure of social forestry projects. It is important that they be accorded an important place right from the inception of the work, in order that they may be identified, analyzed, and, it is hoped, affectively negated before projects get under way. Otherwise a lot, perhaps almost all, will be jeopardized.

Table 1

Organizations Involved with Social Forestry

<u>Level</u>	<u>Function</u>						
	<u>Finance</u>	<u>Credit</u>	<u>R&D</u>	<u>Production</u>	<u>Marketing</u>	<u>Extension</u>	<u>Other</u>
<u>INTERNATIONAL</u>							
World bodies							
National Govts.							
PVOs							
Industry							
<u>NATIONAL</u>							
Central Govt.							
PVOs							
Industry							
<u>LOCAL</u>							
Representatives of							
Inter. Orgs.							
Nat. Govt.							
State govt.							
Local govt.							
PVOs							
Industry							
Co-ops							
Village councils							
Clan groups							
Tribal groups							
Family organizations							

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Discussions on Social Forestry in Africa
Held at the USAID Community Forestry Workshop

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by

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DISCUSSIONS OF SOCIAL FORESTRY IN AFRICA

Africa has significantly less experience in social forestry compared to other parts of the world, and especially compared to Asia. African forestry programs are typically smaller and less expensive than their counterparts in Asia. Fourteen projects in Africa presently are planned or funded totalling about \$67 million. Although the number of projects for Asia is quite similar at around 10-15 projects, the total cost of these current and planned projects is \$157 million. However, there was general agreement that even though funding is less extensive in Africa compared to Asia, the deforestation and fuelwood problems are just as severe, and the need for social forestry programs is just as great.

Institutional constraints. Several reasons were given for the smaller programs in Africa. First, Asia generally has a greater institutional capacity for carrying out forestry programs. In most African countries, the forestry administration capacity is not very extensive. Secondly, the French colonial heritage in West Africa has produced a forest service that is very elitist and authoritarian. As a consequence, even institution-building forestry programs in Africa might be misdirected if programs are monopolized by the traditional forestry administration. Finally, the New Directions orientation of AID has tended to demphasize projects which are directed exclusively towards institution-building. Thus all of these factors may limit the capacity for carrying out social forestry programs in Africa.

Land Constraints. Although African population growth rates are quite

high, Africa does not have the high population density and pressure on the land that is present in many parts of Asia, such as Bangladesh or India. In addition, formally defined individual property rights to land are less well defined in Africa than in Asia. This was viewed both as a positive factor and as a constraint for social forestry in Africa. On the one hand, the competition for land is not as intense, so there should be adequate village lands available for social forestry projects. But, on the other hand, the many different informal agreements regarding access to land mean that the planning of projects must be very sensitive to the diversity of locally agreed-upon land tenure arrangements.

One member of the group, however, indicated that the trend in Africa has been towards more formal, individual forms of land ownership, perhaps caused by the mounting population pressures. Another issue raised was that stable land tenure systems may be more conducive for social forestry programs, since defining the formal rights to the benefits of social forestry projects might possibly be a prerequisite for local commitments of village or individual land, labor, and capital.

Stratification. Three topics were discussed that can be classified as being related to stratification or equity issues. First, the disparities between social classes that exist in some parts of the world generally are not quite as strong in Africa. Although this varies from country to country, in general Africa may be a more favorable environment for the equitable distribution of project benefits.

The second equity issue is that the economic roles of men and women are quite different in Africa, in ways that differ from many other parts of the world. In administering social forestry projects, the women's point of

view must be given special consideration, especially because men predominate in positions of village leadership and power. For social forestry, consulting and involving women in the projects is very important, because they not only cook food for the family, but also are involved in planting and raising food crops; thus fuelwood programs would be of direct interest to women. Because women are involved in agricultural activities, they also may play a key role in planting and maintaining trees.

In rural areas generally women collect fuelwood locally through their labor, but fuelwood and charcoal are part of the cash economy in urban areas. Men, who are more directly involved in the cash economy than women, might be more interested in social forestry projects directed towards urban areas. Also, from the host country officials point of view, the small village fuelwood needs may not be considered of paramount importance compared to urban fuelwood requirements. The vocal and influential urban constituencies may favor large urban fuelwood plantations, both to take the pressure off prices and to help prevent the deforested "rings" that are beginning to surround urban areas in many developing nations.

One solution was offered to the different rural-urban priorities and needs. Given the fact that assured markets seem to be an important component of social forestry projects, perhaps formal or informal marketing systems could be developed that would involve growing trees in small rural woodlots, either by individuals, by tree farmers, or in community or institutional plots. The products of the woodlots could then be sold in the urban areas. This would serve the dual purpose of providing fuelwood for collection in rural areas and assuring a cash market for the product in urban areas.

Multiple uses of trees. The final important issue to be examined by the group was the multiple use of trees. Overconcentration on fuelwood plantations may limit the attractiveness of social forestry for those in the rural areas. Trees generally have multiple uses and woodlots or plantations that fail to consider multiple uses would have much less attractiveness than those that offer a variety of useful forest products.

Major Objectives of AID Social Forestry Project

Several important areas were identified for U. S. AID's role in social forestry and the need for evaluation of existing programs. The broad areas of interest include institution-building and alternative models of social forestry, training, and the capacity of the U. S. and developing countries to conduct research into social forestry problems.

Institution building. The need for institution building is a high priority for social forestry, with the caution that traditional forestry departments may not be responsive to the unique needs of social forestry programs. An example of responsive forestry institutions was cited for a program in Senegal, where village level interest was developed through combining social forestry with rural development projects.

Several diverse issues were discussed in connection with institution building. One issue involved the identification of village level interests and needs, so that programs can be adapted to local conditions. Several different means were discussed that might facilitate identification of village level interest. First, communication channels must be developed so that upward and downward linkages are established in the program. The administrative structure must be both flexible and responsive enough to

identify and meet local needs. To accomplish this goal the flow of information in the administration of the project must be bidirectional, moving both from the bottom up and from the top down. In this sense, social forestry programs must also have an inherent capacity to make mid-course adjustments. Feedback and evaluations of programs must be an ongoing process built into programs. Past programs in many instances have been too inflexible to adapt to local needs and circumstances.

The group also discussed the possibility of setting up programs which would involve alternative models of social forestry that could be adapted according to local needs. Although a variety of social forestry project types exist today, most specific projects are fairly inflexible with regard to offering a variety of programs or services to meet local needs. Institutional flexibility is necessary for determining what kind of social forestry programs, ranging from institutional to community to privately planted woodlots, would be most applicable in particular areas. The possibility exists that two neighboring villages may want quite different social forestry programs. In one village a community leader may become personally involved in organizing a village woodlot for the community, whereas in the other village an individual farmer may want to try growing trees on land adjacent to his fields. In this way, through extensive contacts or discussion with villagers, programs could be adapted to local circumstances. Within this context, perhaps a series of alternative contracts might be developed that would formally define alternative project models, as well as the division of project benefits.

Another issue that was considered is the forward and backward linkages necessary for growing trees as a crop. Forward and backward linkages or the institutional capacity to provide key inputs, including both materials

and knowledge, are necessary at every stage of the tree growing process. Delivery of seedlings during the right time of year, advice on pest control, advice on harvesting techniques, perhaps credit, and other inputs may be necessary components for assuring successful projects. Related to these forward and backward linkages issues, is the possibility of setting up a market structure for the tree products so that the risk of growing trees is substantially diminished for the individuals or institutions that have agreed to participate in the projects.

The multiple use of trees and the opportunity costs of projects also should be examined. The group agreed that the land utilized for social forestry projects, although sometimes classified as "wasteland", nevertheless is likely to have multiple uses for villagers. The opportunity cost of the project, including more research on the value of tree products to villagers, might be important for determining local participation problems in some social forestry programs.

Training. Most forestry departments in developing countries have dealt almost exclusively with trees in forest reserves. Now these same departments are being asked to implement programs that involve the supervision of planting trees outside of forest reserves. With this change in the mandate for programs, involving more decentralized tree planting, the training necessary for social forestry might take either one of two directions. Either the forester needs to be retrained to be more aware of rural development issues, or the agricultural extension and/or rural development services must be trained to deal with tree growing programs. Concerning the training of personnel in the agricultural or rural development services, one drawback would be that the priority of social

forestry might be lost in the larger context of rural development issues. On the other hand, another member of the group indicated that some agricultural development personnel considered fruit trees to be a part of their responsibility, and trees for fuelwood and other forest productions might easily be added to their duties.

The group was in agreement that training/education must be carried out at all different levels of the program, including interested local villagers, perhaps programs in schools, field agents, and senior level forestry officials. At the top levels, training/education involving reorientation might be necessary, while at the bottom levels training/education in forestry techniques might be a priority. These details would differ on a country by country basis.

Institutional Capacity and Areas of Research

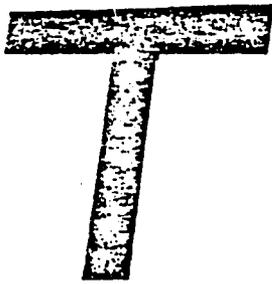
The capacity to conduct social forestry research both in the United States and in Africa is rather limited. The group felt that a review of the literature on social forestry is an important first task for defining the major issues that must be examined. It was suggested that a series of regional workshops might contribute to defining the major issues in social forestry for Africa. These workshops might include AID personnel and persons with the most experience in social forestry issues in various African regions. Another idea was that during the next year U. S. AID could send out teams to quickly investigate the most important cases or models of social forestry in Africa. These cases would not necessarily be limited to AID-funded projects. Everyone agreed that it is necessary to contact the United Nations Food and Agricultural Organization (UNFAO) and the Swedish International Development Authority (SIDA), and other agencies

involve in social forestry. There also is a need to review the capacity of African institutions to conduct research in social forestry. One person suggested that ICRAF might be a good place to start, but even it has not completed any extensive field testing of species for agro-forestry.

The most important areas of research that were identified included the identification of the most appropriate models or promising types of social forestry (programs that have worked in the past), the examination of existing tree growing by individuals that were not part of social forestry programs (spontaneous tree planting), the interface between village institutions (social, legal, economic, etc.) with the administrative structure of social forestry programs, and the opportunity costs of changing existing land-use patterns to include a formal tree growing program, and the equity of the programs. Finally, while there was some disagreement on the most important areas of research, the group agreed that there is a need to strengthen the indigenous capacity of research institutions in African countries to conduct research on social forestry.



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WARREN W. WIGGINS, PRESIDENT

Eric Chetwynd
Office of Multisectoral Development
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Washington, DC 20523

Dear Eric,

Enclosed is a copy of the paper I prepared following the Community Forestry Workshop. I apologize for being so tardy in its submission. I hope you find these thoughts useful in your efforts to develop AID strategies in the design of Forestry Projects for Local Community Development. I would be very interested in participating further with you in this effort. Please don't hesitate to call if you find I can be of any further assistance.

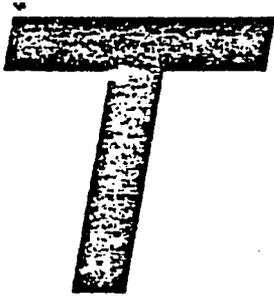
Thank you for the opportunity to participate in the workshop.

Sincerely,

R. Paul Chakroff
Director, Natural Resources
Division

RPC:w

Enclosure



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LOUIS L. MITCHELL, PRESIDENT

Preliminary Checklist of Socioeconomic Issues
Related to Technical and Biological Components
of Social Forestry Projects

a paper prepared for the Community Forestry Workshop
sponsored by USAID Bureau of Science and Technology,
Office of Multisectoral Development 12-14 July, 1982

by R. Paul Chakroff

August 20, 1982

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Forestry Projects for Local Community Development (short-titled "Social Forestry Projects") include for me those rural development or community development projects that involve the culture of trees and are therefore those projects that are in the sets of both rural development and forestry projects.

Like other forestry projects, they have certain economic, technical and biological components that are required to successfully plant and maintain the growth of trees. And like Rural development projects they have ultimate social objectives at the local community level to which the forest resources will contribute. The social, economic, technical and biological components of social forestry projects are highly interdependent and each places demands upon and is in turn constrained by other project components. For example, if an economic objective of a project is to provide a forest cash crop for a small village, commercially valuable species of trees that grow well in the local climatic regime would be selected for propagation. While



if a socioeconomic objective of the project is to reduce flooding of communities downstream from the site, plants with extensive lateral root systems would be selected. In turn, the particular tree species selected for propagation will have different financial demands and labor requirements. This is because some tree species can be propagated by sowing directly on the site with minor site preparation, while others require nursery propagation and more labor-intensive site preparation before transplanting to the forest site. Some trees require long term protection from goats, cattle and wild animals, while others are not browsed by animals. Different trees have different water requirements, fertilizer requirements, and so on.

In the following paper, I will identify technical and biological tasks or activities typical of many social forestry projects and some of the socioeconomic issues related to each. These tasks are organized under the general headings of A. Forestry Institutional Capacity Building, B. Project Design and Site Selection, C. Nursery Operations, D. Plantation Site Preparation and Planting, E. Forest Maintenance and Protection, and F. Harvesting and Marketing. This paper should be read as an off-the-top-of-the-head reflection of one forest biologist and not a comprehensive, thoroughly researched monograph on the subject. I hope it will provide a preliminary check list that other foresters, sociologists and economists can consider and elaborate upon in the design of social forestry projects.

A. Forestry Institutional Capacity Building

In order to ensure the effective long-term implementation of social forestry projects in many countries it is necessary to develop or improve upon existing institutional capacity. Frequently forestry-sector institutions have little or no institutional history or capacity in implementing community development projects and rural development institutions have no capability in silviculture. Activities to be conducted under a social forestry project may include:

1. Identify the institutions that will be responsible for managing aspects of the project at the local, regional and national levels.
2. Identify needs for capacity building in the institutions in such areas as:
 - organizational management
 - planning
 - project development
 - financial management
 - extension
 - monitoring and evaluation
 - research and development
3. Develop a project design for meeting the institutional needs.

In performance of these activities, the project design team should address such issues as the following:

1. What national, regional and/or local organizations will be responsible for the social forestry project?
2. What other responsibilities does the organization have?
3. What are the disciplines and levels of training of the staff involved?
4. What training do they require in order to take on responsibilities for the social forestry project?

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5. Where can this training be provided? At a University? Government training center? Field training course?
6. Under what authority will the institutions operate?
7. Is the authority adequate, if not how can new legislation or executive orders be instituted to provide necessary authority?
8. Are R&D facilities and trained researchers in place that can assume additional work responsive to the needs of the project?
9. What are the extension needs of the project?
10. Can these be met through an existing extension service in the Forest Department? Agriculture Department? University system?
11. If not, must a new extension capability be developed? If so, in what institution?
12. What institution will be responsible for construction of engineering works for soil erosion control? Soil Conservation Department? Forest Department? Public Works? The Community? The Land holder? Other?
13. Will capacity be built in one institution in a discipline for which another institution traditionally has authority?
14. If so will this cause any inter-institutional conflicts?

B. Project Design and Site Selection

With the institutional capacity for conducting the social forestry project accounted for, we may move to the field activities to be prepared under the project. These will be designed to meet the defined community development objectives of the project. Following are activities that may be performed in the design of project field activities:

1. Define the social and economic objectives of the project.
2. Identify the beneficiaries.
3. Identify those who will lose opportunities in the short term and long term as a result of the project.

4. Select appropriate tree and other plant species that will meet the social and economic objectives of the project plus compensate individuals for lost opportunities.
5. Design tree planting, management, and harvesting schemes consistent with biological, economic and social objectives.
6. Define the roles and responsibilities of individuals or groups to be involved directly and indirectly in the project.
7. Design appropriate training and extension programs for these individuals and groups.
8. Identify activities that will be permitted and those that will be prohibited on the plantation site during the course of the project.
9. Develop socially acceptable mechanisms for permitting and prohibiting these activities.
10. Identify sources for equipment, tools and supplies, including seed, fertilizer and water, for the nursery and plantation operations.
11. Identify markets and marketing schemes for the forest products to result from the project.

During the project design phase, a wide variety of social and local economic issues must be considered. The answers to the following questions will begin to identify the direct and indirect social ramifications of the project.

1. Will the project provide cash or forest products such as fuelwood, fodder, nuts, berries, etc., to the beneficiaries?
2. Is the project designed primarily to benefit small entrepreneurs? local households? small landholders? women? nomads? the Forest Department? others? all of the above?



3. Who is presently the forest site will be excluded from continuing to use it once the project is undertaken?
 - local children or nomads herding cattle or goats?
 - women, children or men who collect fuelwood fodder, medicinal plants, local building materials, etc.?
4. What tree species are appropriate for planting given the socioeconomic objectives of the project and the ecological constraints, including the soil conditions, and the temperature and rainfall regimes of the area?
5. What species will be planted or activities sponsored to compensate those who lose opportunities as a result of the project?
 - fodder distribution?
 - fodder grass and tree planting?
 - opening access to other areas for collection use?
6. Who is responsible in the community to see that the project is carried out as planned, that beneficiaries receive their benefits, and that people are equitably compensated for lost opportunities?
7. Is he or she an appropriate representative of the other's interests, and is he or she recognized as such by the local people involved?
8. Does he or she have any self interest in the project?
9. What activities will be permitted in the project site in years 1-5 or the project? 5 - harvest?
 - fodder grass collection?
 - trimming, pruning and collection of deadwood?
 - grazing?
 - collection of medicinal plants and other minor forest products?
 - other?

10. How will the prohibition of activities be enforced?
 - by the local people?
 - by outsiders?
 - by government officials?
 - with fences, firearms, dogs, etc.?
11. Under what authority will enforcement be carried out?
 - local or traditional laws?
 - common law?
 - peer pressure?
 - federal or state law?
12. How will local people be educated to the necessity of accepting the prohibitions?
13. How will seed, tools, equipment and supplies be procured? From where?
14. Is the institutional capacity of the responsible organization adequate to perform the procurement, warehousing, transport activities?
15. How will forest products or raw materials produced under the project be harvested, processed and marketed?

C. Nursery Operations

Nursery operations under Social Forestry projects may be of two types seedling production nurseries and seed production/research orchards. Following are activities typically performed in setting up and operating nurseries.

Seedling Production Nurseries

1. Lease, buy or otherwise obtain rights to the nursery site conveniently located to the plantation site(s).
2. Layout the nursery and construct necessary facilities.

3. Procure equipment, supplies and seed or root or shoot cuttings of tree varieties appropriate for planting at selected plantation sites.
4. Treat and store seeds according to the requirements of each species.
5. At appropriate time plant seeds or cuttings in beds, plastic bags, root trainers or according to other appropriate methods.
6. Water, fertilize, weed and otherwise care for seedlings during the 6 month, 1 year, 2 year or other time period required for nursery propagation of the particular species.
7. Transplant and graft as necessary to produce hardy plants.
8. Observe and control diseases and pests.
9. Monitor and maintain records in order to improve nursery practices and improve species, variety and parent stock selection in the future.
10. Harden roots, dibble, or otherwise prepare seedlings for transport.
11. Transport seeds and seedlings to the plantation site.

Seed Production and Research Orchards

12. If it does not exist, develop in an existing institution an R&D capability for providing tree seed for indigenous and exotic species appropriate for use at the project site(s).
- 13, 14, 15... Specific activities under the development and execution of forest genetics research, forest tree breeding, and tree improvement programs.

In laying-out and operating a nursery, there are many considerations beyond such technical issues as water supply and availability of seed. Following are some of the social and cultural issues that should be raised relative to this aspect of the social forestry operation:

1. Who owns the land on which the nursery is located?
 - government?
 - local community?
 - private landholder?

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D. Plantation Site Preparation and Planting

At the forest plantation site, ecological conditions and traditional land uses will dictate the biological and technical tasks to be performed in preparing the land and planting the trees. Following are examples of the tasks that may be performed in establishing the new forest:

1. Construct soil erosion control structures, such as check dams, and soil retention ridges as necessary.
2. Layout plantation pattern so as to provide for fire prevention and containment.
3. Dig pits or trenches and prepare seed beds by fertilizing, mulching, integrating good soil, etc.
4. Remove seedlings from containers or otherwise prepare them for planting.
5. Plant seedlings and sow seed.
6. Water, mulch, dry mulch and/or take other precautions to prevent seedling desiccation.
7. Construct fencing, plant live fencing, place guards or otherwise implement the mechanisms developed for protecting seedlings from damage by domestic and wild animals and people.
8. Plant fodder grasses or fruit trees, provide fodder or conduct other activities as planned to compensate individuals for lost opportunities that may be resulting from the project.

Social issues to be addressed relative to the plantation site operation may include:

1. Considering that construction of engineering works may not provide any direct economic return to the local beneficiaries, who pays for soil conservation?
2. What labor, training, and equipment is necessary for fire prevention and control?
3. Who supervises the site preparation and planting? What is his or her training?
4. Who will ensure that removal of seedlings from plastic bags is done correctly, preventing root bound trees?
5. How will the plantation be protected from damage by wild animals? domestic animals? local residents? people from nearby villages? nomads? etc.?
6. How will this be enforced?
7. Who assumes the liability if the plantation is damaged or lost to fire, drought, pilferage, etc.?
8. At what point will the trees be well enough established that these restrictions can be relaxed?
 - 3 years, 5, 10?
9. What activities will be permitted at this time?
 - grazing?
 - cutting grass?
 - deadwood collection?

E. Forest Maintenance and Protection

Silvicultural activities must be performed over the productive life of the forest which may range from 5 or 10 to 40 or even over 100 years depending upon the nature of the forestry project. During this period at least the following activities must be performed.

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1. Weed, water, prune and thin trees as planned until the trees are ready for harvest.
2. Replace dead trees.
3. Protect the trees and supervise multiple uses of the site according to the management plan over the duration of the project.
4. Monitor growth and survival rates and keep records in order to improve silvicultural methods and improve selection of species, variety and parent stock in the future.
5. Modify the management plan and silvicultural methods as necessary to improve tree growth and survival.

One important characteristic of social forestry projects is the long times required for trees to grow and yield a product. Here in lies a real problem for many international assistance agencies who like to see relatively quick results from 3 to 5 year projects. The extended time requirements can also place severe hardship on factions of the community who may have to forgot certain traditional activities on the project site. Following are some of the social issues to be accounted for during the grow-out period.

1. Who is responsible for supervision of forest maintenance over the duration of the project? Forest Department? Private landholder? Community group?
2. Are her or she (or they) community resident(s)?
3. Under whose authority will he/she/they operate?
4. What authority and resources will he or she have to respond to emergencies, such as fire, pest or disease outbreaks, drought, etc.?
5. What are the continuing labor requirements for replacement of failures, thinning, pruning, controlling damage by wild animals, etc.?

6. What species will be used to replace failures and where will they be obtained?
7. Who will get the pruned and trimmed branches and deadwood?
8. Will they be sold or given away?
9. What records will be kept at the plantation? By whom?
10. How will they be verified, analyzed and used to modify the management plan if necessary?

F. Harvesting and Marketing

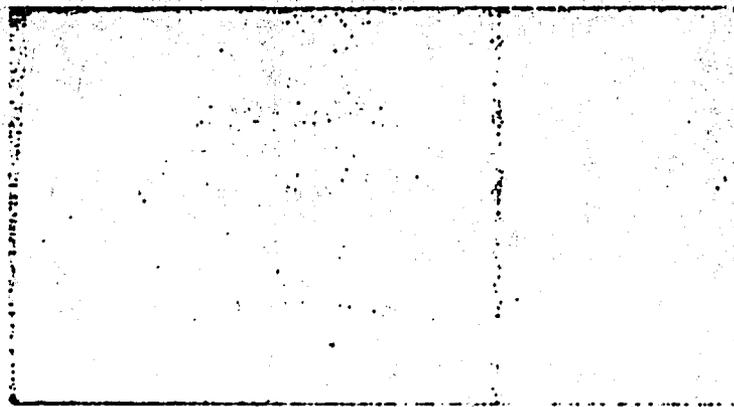
The final activities under the project relate to reaping and distribution of benefits that result from the harvest of forest products:

1. Harvest the forest products through selective or clearcutting as planned.
2. Transport the trees off the site and to the predefined and/or new market(s).
3. Manufacture or process the forest products if applicable.
4. Sell or otherwise dispose of the products.
5. Ensure the benefits of the project are provided to the beneficiaries as originally planned.
6. Replant with new seedlings or otherwise prevent soil erosion from the newly harvested site.

Social issues related to the harvest may include:

1. Who will harvest, transport and sell the forest products?
2. How will it be harvested? labor intensively?
3. Who will benefit - the entire community? the land holders? private entrepreneurs? individuals in the community? the forest department?
4. Who assumes the risk or loss in case of failure of the plantation?
5. How will beneficiaries get their benefits? directly through receipt of cash? payment for services? indirectly through sale of goods? directly through receipt of forest products?

6. Who will ensure soil conservation mechanisms are provided at the site after everyone has cashed in on the harvest?



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Notes on Training
for
Social and Community Forestry
by
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July 22, 1982

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NOTES ON TRAINING FOR SOCIAL AND COMMUNITY FORESTRY

Michael M Horowitz

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1. Social and community forestry projects call for behavioral changes among small-scale producers in developing countries. Like similar efforts in agriculture and other areas, successful development interventions in social and community forestry must be predicated on sound understandings of the socio-economics and ecology of the beneficiary populations. Since the requisite understandings and the means of achieving them are rarely well-established among those responsible for project implementation, it will be necessary for the donor organizations and host government offices concerned to provide the appropriate staff training. This brief paper outlines what that training might encompass.

2. The lack of requisite understandings of the socio-economics and ecology underlying social and community forestry is directly related to the recency of major efforts in this field in most developing countries and to the traditional top-down approach of their extension organizations.

2.1 Forest Departments traditionally concerned themselves with commercial sector forestry and with the management of forest and wild-life reserves. They have not had to deal with the place of forest resources within local socio-cultural systems; that is, with the perception and utilization of forest resources by local populations. Thus, Forest Departments are usually ill-prepared to involve their staff in programs and projects emphasizing the non-commercial, non-export utilization of trees (as for fuel, food, fodder, domestic construction, shade, medicine, and ritual items).

2.2 Forest Departments, concentrating on commercial and environmental

activities (the latter often invoking quasi-police functions) have little experience in extension among small-scale producers.

2.3 Agricultural Departments do have experience working with small-scale producers, but much of that is normally associated with involving the smallholder in a specified range of commercial activities (the so-called "cash-crop" sector), which for trees is limited to fruit and nut bearing varieties, or in soil conservation (such as planting trees for wind breaks)

2.4 Despite this experience, Agricultural Extension agencies are themselves often poorly prepared to work with small-scale producers. In its discussion of problems associated with improving production among small communal lands farmers in Zimbabwe, a current Agency for International Development report signals the paucity of relevant information:

Little investigation has been carried out on smallholder production constraints and practices in areas such as power, soils, labor shortages, small-scale mechanization, mixed cropping. Nor has much work been done on traditional smallholder crops... Research on the economics of smallholder production has been far too limited (USAID 1982:10).

To this inventory I would add the usual poor understandings of local land access and land tenure systems and of the social and sexual division of labor. Similar assessments could be made of many other national agricultural extension services in developing countries. Since few if any of these countries can afford the luxury of a special extension service for social and community forestry, it is essential that the existing services as well as Forest Department staff be trained to facilitate effective program and project implementation.

2.5 While both Forest and Agricultural persons will become involved in the extension effort for social and community forestry activities, it is important to anticipate the organizational risk that the extension agent in the field will not be "fully accountable for his [or her] time and performance" to only one organization (Cernea 1981:222). The field

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agent is likely to receive multiple and sometimes conflict instructions.¹ It is important, therefore, for the supervisory staff at the Agricultural Extension service also to receive technical training from the Forest Department, in order that field agents may receive instructions from the same organization providing administrative control and general support.

2.6 Collaboration might be facilitated among the several government services involved by holding the training sessions for project staff at the Forestry College (or national equivalent), and by having senior staff from all relevant services participate in the training.

2.7 A further problem that should be anticipated is that in some countries either or both the Extension Service and the Forest Department are viewed with suspicion, if not outright hostility, by smallholders who identify government services with capricious, arbitrary policies that are often coercively enforced. Because these agencies are often under-staffed and poorly trained, and because they rely on top-down methods, farmers become passive recipients of information rather than active participants in the extension process. Despite current rhetoric in many developing countries acknowledging the importance of a farm systems approach to extension, basing interventions on the socio-economics and ecology of smallholder production, the farm systems approach is honored in the breach rather than in application. Agricultural extension agents and their superiors are often unwelcome visitors at the farm.

¹ Referring to an approach known as the "Training and Visit Extension System," World Bank sociologist Michael Cernea cites its authors, Daniel Benor and James Q. Harrison, on this point:

Perhaps 'the most essential management principle to be followed is to establish a single line of command from the governmental agency responsible for agriculture to the field-level extension worker.' This agency should be, in general, the Agricultural Department, which should have full administrative authority over extension workers. They are thus defined as professional agricultural agents and not as community development agents in general (Cernea 1981:223).

3. Social and community forestry project staff should be provided with training in social forestry and farm systems research. Depending on the resources and time available, the minimum training offering should involve a workshop-seminar combined with field visits (sometimes to pertinent projects in neighboring countries). Recognizing that middle-level and senior staff will not be able readily to absent themselves from their usual assignments for long periods, the workshop-seminar might in its initial session last from a month to six weeks, with shorter follow-up sessions of about a week each during project implementation at intervals of from six months to a year.

Staffed mainly by persons experienced in socio-economic and ecological impact analysis from within the country and from neighboring countries, with the addition of such expatriate expertise as deemed necessary, workshop-seminar participants would be exposed to the relevance of a range of issues not conventionally examined in commercially-oriented forestry curricula nor, one must note, in the training of many extension agents.

Farming systems: a unique and reasonably stable arrangement of farming enterprises that a household manages according to well-defined practices in response to the physical, biological, and socioeconomic environments and in accordance with the household's goals, preferences, and resources. These factors combine to influence output and production methods...

Farming systems research and development: an approach to agricultural research and development that (1) views the whole farm as a system, and (2) focuses on the interdependencies among the components under the control of members of the farm household and how these components interact with the physical, biological, and socioeconomic factors not under the household's control. The approach involves selecting target areas and farmers, identifying problems and opportunities, designing and executing on-farm research and evaluating and implementing the results. In the process, opportunities for improving public policies and support systems affecting the target farmers are also considered (Shaner et al 1982:214).

Among the principal issues to be explored in the workshop-seminar are:

- 3.1 The nature of land rights, both formal-legal and customary (cf. Cernea 1981a; Horowitz and Badi 1981), including issues of security of tenure on individual and on "communal" holdings, the nature of inheritance, the adjudication of competing claims over land, etc. Security

would appear to be a critical factor if farmers are to be expected to invest land, labor and capital in tree-planting on their own fields and will not see any "return" for quite a few years. Even with such fast growing species as Eucalyptus^{SPP}, the first copice is normally deferred until five to seven years after planting. The full opportunity costs of the land extend over a generation. Thus not only must the farmer have a reasonable assurance of secure tenure during his life time, but also must be assured that persons for whom he/she is responsible will enjoy that access in the future.

3.2 The nature of the rural community. What are the rights of access to and obligations to contribute to a joint estate? Who and under what conditions may persons be denied that access? What kinds of decision-making institutions exist, and how do they adjudicate competition over realms of authority? It is important to understand that the nature of community is not self-evident, and not necessarily identified with any other unit (such as village, ward, "tribe"). In many parts of the developing world, there have been vast population shiftings during the colonial and post-colonial periods, and the local residential unit may be unable to organize people corporately. Ways of ascertaining the structure and composition of community must be explored, especially where communal wood lots and similar events are proposed for implementation.

3.3 What are local perceptions of the use of wood (as fuel, fodder, building material, source of food, shade, soil stabilization, soil enrichment through nitrogen fixation, bird nesting², boundary markers, etc.)? What is the relevance of these perceptions for programs of afforestation, controlled harvesting, charcoal manufacture, etc.?

² In parts of the Sudan, farmers remove trees even at a distance from their fields to deny nesting place to grain-consuming birds.

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3.4 Under what conditions do smallholders perceive the deficit between production (through natural regrowth) and consumption of forest products to be a problem meriting solution? For example, rural dwellers may perceive the shortfall of fuelwood and poles production over consumption as a problem depending upon their relationship to one or more of the following features:

3.4.1 An increasing amount of time is invested and an increasing distance is traversed in obtaining adequate supplies. Where women and children are responsible for transporting fuelwood from the forests to the homestead, they are more likely to perceive changes in these features than are men.

3.4.2 The preferred species, for example, one that is slow-burning with a pleasant odor for fuelwood, or straight, durable, and termite-resistant for poles, becomes less available, and people make do with less desired types.

3.4.3 Wood becomes commercialized and must be purchased.

3.4.4 Alternative energy sources (such as kerosene, agricultural refuse, or dung) are substituted for fuelwood and/or alternative construction methods (such as brick, metal) are substituted for poles. Are these indicative of a wood shortage or of increasing affluence and an emulation of urban life styles?

3.4.5 Smallholders on their own initiative devote some of their lands and/or rural collectivities devote some of the communal lands to the cultivation of trees for fuel and poles.

3.4.6 Trees that are normally reserved for other uses -- such as for fruits and pods, medicine, shade, bark for robe -- are felled for fuelwood and roundwood.

3.5 What is the nature of local socio-economic differentiation and the division of labor, including the roles of women, the evaluation of women's

labor by themselves and by men, the position of strangers, of elites, the landless, persons with different ethnic identities, the education, etc.? The sexual division of labor has especial relevance to social and community forestry projects because of the often differing relationships that men and women have to forest products.

3.6 Who will benefit from a social forestry project? Will the project contribute both to growth and to equity while simultaneously retarding or reversing environmental degradation? How can one determine if a project is being captured by local elites, and what can and should be done about it?

3.7 The workshop-seminar would consider methodological issues, such as being clear on what kinds of data are necessary for the falsification of what kinds of hypotheses. How can these data best be obtained? What can be learned from socio-economic surveys, and how should the survey instrument be constructed? What can be learned from in-depth examinations of selected areas? What are the trade-offs between broad surveys and a few in-depth field studies?

4. The objective of the training sessions is not to turn a forester or an extension officer into a socio-economist, but rather to sensitize program and project staff to the critical importance of these issues for project success and to facilitate their ability to work closely both with the smallholders and with the staff members directly responsible for project research, monitoring, and evaluation.

5. While the immediate beneficiaries of the training will be the participants who will be able more efficiently to undertake social forestry related research and development, the ultimate beneficiaries should be the smallholders themselves. Through social analysis, these latter will participate in the definition, preparation, appraisal, implementation, monitoring, and evaluation of social and

community forestry programs and projects.

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**Social Factors Affecting the Adoption
of Social Forestry Techniques/Technologies**

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State of the Problem

Forestry has been part of rural development since human communities began to form on the edge of forests. As small communities and tribes were absorbed or displaced by civic cultures in the fertile crescent, Indus, Yellow and Nile rivers deforestation became evident. The loss of forest cover meant erosion of the resource base and ultimately the social and cultural base of rural peoples. Fourteenth century forestry in France, Germany and the Netherlands was a response to a wood crisis. In the United States in the middle 1800's and again in the 1930's timber famines, forest degradation and soil erosion were all reasons for seeking sustained yield management. The loss of forests through ignorance, wilfulness or general stupidity have long been remarked by visitors to North America, by easterners looking at the former pinery in Michigan and Minnesota, or by northerners looking at the lands in the Tennessee Valley. The discovery of connections between forest degradation and social degradation in Less Developed Countries, and particularly in the Tropics is but one new phase in this cycle of awareness.

However, as Simmons (1980) demonstrates for LDC's the problem seems larger in magnitude, rate of loss and in the nature of causes. Four uses are listed as causing unsustainable forestry: fuelwood collection, shifting cultivation, pasture and forage production, and commercial timber cutting. Two other causes are mentioned by other sources -- agricultural encroachment and urban encroachment. In general the LDC rural development literature suggests that

traditional, westernized forestry practices and technologies have not been effective in halting the forest loss. Indeed, large scale, highly capitalized, and centralized projects may be part of the problem not the solution. As Eckholm (1979:34) argues:

Traditionally, and not surprisingly, most national forest departments have concerned themselves almost exclusively with areas officially designated as "forest" ... the bulk of official forestry investment in poor countries has been devoted to large-scale timber exploitation for industrial, urban, and export markets ... Meanwhile, the small-scale, spatially diffused forestry needs of the rural majority .. have often been virtually ignored. As Jack Westoby, a longtime social critic of international forestry puts it, "In precious few countries have the energies of the foresters been bent upon helping the peasant to develop the kind of forestry that would serve his material welfare.

Eckholm, as several others on the subject, believes that a new kind of forestry needs to be practiced if we are to reverse the deforestation trend and improve the well being of rural people. He argues that we need to stem waste, rehabilitate unforested land, reclaim presently wasted land, stabilize watersheds, and plant for fuel resources nearby. We must go to the community because it is the only way to restore forests and it is the most economical means to sustain the forest.

Eckholm's updated version of "waste not, want not" combines nicely with a growing sense that local governance is the best and the cheapest. All of this suggests that the intellectual antecedents of social forestry are neither new, nor untried. Indeed, there is a substantial literature on these very topics, the need is to get them synthesized and re-shaped to aid social forestry project development. As Hoskins (1982) notes, regarding available experience, "it is time to take the tools and project successes which we have developed, to see in what way they may be used or modified to improve our future social forestry programming." This paper seeks to complement her experiential knowledge by suggesting that there is also a research data and methodological base for such programming.

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This paper will outline a variety of factors that affect the successful transfer of social forestry techniques/technologies. It suggests literatures that should be considered. It considers the many functions of forestry and attempts to identify what is special about "social forestry," it makes an aside plea for considering nature based, local tourism services as a social forestry strategy, it considers four kinds of innovation, five community patterns of adaptation and concludes by noting elements in the adoption process.

One thing that seems certain in the social forestry area is that it is directed to the local interests and is relatively smaller in scale than most commercial operations. Indeed, much of literature is not unfamiliar to foresters who lived through the 1960's in North America and Western Europe, when the profession and public practitioners of the profession were compelled to consider a much wider range of products and services available from forests than timber and were very strongly compelled to become involved in "public participation." So social forestry not unlike a District Ranger dealing with a small rural, forest dependent community in Oregon with sagebrush rebels, Sierra Clubbers and local merchants all wishing "to participate" in the allocation of benefits and seeking some means to shift the cost elsewhere. As the FAO notes,

The object of community forestry programmes is to enable rural people to enjoy a "better life" in balance with the environment and local natural resources.

Forestry is only part of a much larger problem of rural development which can be solved only if high priority is accorded to helping rural populations.

Forestry development is intimately bound up with rural life in all its facets.

If forestry development is to be appropriate to the communities, it must relate to them and their values. There must be a regular flow of information and opinion between members of the community and any external agencies .. needs should .. emanate from the "bottom up" and not be something imposed from the "top down." (FAO, 1978)

This rather revolutionary statement seems as good as any for looking at the range of social forestry techniques/technologies and the social factors affecting their adoption.

Forestry -- Many Functions and Practices Arrayed on A Social - Commercial Continuum

The attached table represents a composite of forestry functions, activities and products suggested by Eckholm, Blair, World Bank, FAO, AID, RFF and others. I have added nature based tourism/recreation and some "new" forestry that has recently emerged -- such as urban forestry. I agree with Dave Joslyn and others that all forestry is social in direction, intent and benefits. However, there is some value in a term around which to cluster certain forestry activities. Northern spruce, fir, birch pulpwood forestry is distinct from southern pine pulpwood forestry and both are different from west coast peeler log, Doug Fir forestry. So I would suggest that whenever the forestry practice tends toward small in scale, decentralized in benefits and local in control it is "social/community" forestry. When it tends toward large scale, centralized benefits and national or international control it is "commercial" forestry. I see no reason why activities begun as social forestry might not emerge as commercial forestry (eg. production of arabic gum, reaches such a scale, organization and markets that it becomes "commercial"). On the other hand, many activities begun as commercial forestry may not work and there is a shift to local, cooperatives, smaller "peckerwood" operations with better flexibility to adjust to markets and accept different incentives.

Let me give my pitch for nature-based recreation/tourism. Again I do not see how foresters from Oxford, Munich or even Syracuse can overlook this regular, daily, increasingly recreational use of forest settings -- and not recognize that it is a major dimension of forest management. There is only one ethnographic study I have read, Trumbull's MEIK, that reports no play behavior by a people. All other studies stress play and leisure as central activities of subsistence peoples. Indeed, Sahlins calls hunter-gatherer, subsistence peoples, the true affluent, leisure class. Maybe the rural poor of LDC's are less serious and puritanical than International Development professionals?

An Aside on Small Scale Nature Based Tourism As Rural Development Strategy

The use of forests as places of refreshment and relaxation is certainly as old as their use for fuel and shelter. Whether ancient China, Rome or Wordsworth's England, we find people leaving the cities for holidays in the mountains, hills and forests of the countryside. In modern North America, forest based tourism is often more substantial an income earner than timbering. This is especially so in the arid Rocky Mountain National Forests. For the most part this income is not part of a major spectacular like Yellowstone National Park or part of large scale industrial tourism like Vail or Sun Valley. Rather it is part of the countless, undifferentiated acres of northern Maine or Michigan or Eastern Oregon where small scale, locally designed, owned and operated firms serve tourists visiting the forests for relaxation. The same can be seen in the Gir Forest of India or Borvilli Reserve outside Bombay. Here, ordinary people from the city come to the countryside to relax and enjoy the rustic atmosphere. The local residents

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continue to farm, harvest trees and engage in other forms of primary production. Indeed, that is part of the attraction for the tourists. Most middle class residents of Bombay have some favored rural area whose hill station they return to year after year. Their actions, like Bostonians in Northern Maine, provide substantial income transfer and permit a wiser use of the forest resource because there is supplemental income.

I stress the value of small scale, locally based tourism for rural development because like other forestry activities, tourism has seemed to be only large scale and internationally oriented. Yet, when we attempt to modify large scale timber oriented forestry we look at temperate models and histories. Curiously the "mom and pop" tourist serving business in Northern Minnesota may have more to do with "social forestry" than any other use of temperate forests.

Given the nature of small scale, locally based tourism for rural areas it is surprising that in none of the literature on social forestry, community forestry or just plain forestry is there any mention of such products and services for LDC's. In all the lists and lists of products, benefits and services from better forestry never is there mentioned the most common and universal use of wildland areas. This seems a real loss because a tertiary economy like the U.S. has certain unique skills in managing service activities. Further, wildland recreation is often the best means for mutually linking the interests of urban and rural populations. Of course no more than we can encourage silvi pasturage, agroforestry or commercial timbering on every wildland acre, can we encourage small scale nature based tourism. The technical need is in identifying the most likely locales, the means for integrating such activities with other resource uses, basic management and design practices, marketing and maintenance.

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Finally, if our central policy goals are the protection and enhancement of forested ecosystems so they may serve to sustain and improve the social, economic and physical well being of rural populations; and if social forestry is one best means to secure these goals, then we cannot leave unconsidered any product or service technology that might advance these goals. Indeed, part of this project might be the exploration of the range, nature and types of alternative uses of wildlands that could serve rural development needs under the larger planning and integration of forestry.

TABLE ONE
TYPES OF FORESTRY AND CONTROL LOCUS

Primary Function	Social		Commercial
	Scale	Benefit Distribution	Control
	large - small	Central - Decentralized	Nation-Local

Environmental

- watershed protection
- wildlife protection
- scenic protection
- cultural protection
- erosion control
- sound, air and water flow control, land use separation (hedgerons, greenbelts)
- urban forestry

Subsistence

- fuelwood/charcoal production
- agroforestry (including shifting cultivation)
- silvipasture
- arboriculture
- sericulture, apiculture
- medicinal/chemical extraction
- shetter (poles/sawmilling)
- multiple-use (game, edible plants, weaving materials, crafts, etc.)
- recreation
- reclaim wasteland

Industrial

chemicals
energy
sawtimber
pulpwood
veneer
poles
tourism

Environmental Forestry has to do with sustaining the ecosystem. The management strategy is to ensure that any economic or social uses of wildlands are subordinate to the primary function of protecting and enhancing the ecosystem.

Subsistence Forestry has to do with providing the basic necessities of fuel, food, shelter and recreation. The management strategy is directed to sustaining and enhancing the most appropriate uses given the capacity and capability of the ecosystem.

Industrial Forestry has to do with the production of raw materials which can be chemically and mechanically processed into a variety of manufactured products. The management strategy is to ensure an adequate flow of raw materials to sustain the conversion process. Rather than forests and individual trees, industrial forestry sees Btus, fiber diversity and the chemical composition of woody plants.

In general environmental forestry has been the province of ecologists of various specialities -- wildlife, botany, water systems and so forth. Subsistence forestry has been the province of the empirical folkways of specific villages with some horticultural specialists. Industrial forestry, in spite of much talk about multiple use, has been the central interest of forestry schools and colleges, for the most part, non-economic social science has dabbled on the fringes -- anthropology has examined swidden/shifting cultivation systems, rural sociology has examined recreation and forest fire behaviors, while political science has considered the structure and function of forestry bureaucracies. Roughly, these are the theoretical and methodological turfs that must be combined in special ways to serve the distinctive social and ecological variations associated with LDC forest communities.

Each of the activities along the left side of the table could be seen as innovations/technologies which are being transferred to villages, communities or localities. However, some of those activities are simple and straightforward, others involve substantially new patterns of organization, attitudes and value orientation. So an important consideration is the nature of the specific innovation and the kind of "social" innovation it might be. The following sections will consider kinds of innovations, patterns of community response to change, give a quick review of the adoption process and provide a heuristic model for the adoption of social forestry practices.

Four Kinds of Social Forestry Innovations

The social forestry literature suggests that donor and host forest professionals are promoting at least four patterns of innovative change for rural villages -- technology, taste, rules and values. Rural villages will be provided better tree species, better means to harvest them and other technologies. However, these technologies may require changes in taste, e.g. smell and aesthetic preferences. For example, a plantation may be a neutral word to foresters but to many villagers in Latin America it has unpleasant connotations. We should remember that a constant complaint in Britain is the forestry commission planting conifers rather "good" english oaks. So we are saying to LDC communities, "like the looks of this foreign tree, all in the funny unnatural row, don't worry about the smell when it is burning and it really does not make the food taste any differently." Thirdly, if we follow Eckholm and others we are altering land tenure roles, certain gathering roles assigned on the basis of gender and age, and the rules affecting relations between social strata. Finally, we are entering villages which may have fatalistic world values, and requiring a shift to long term, rationalistic values if the seedlings are to survive.

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As we move from technology toward values we move toward increasing resistance. People can appreciate a technology that permits traditional practices to be done better -- a horse is better than walking, a rifle better than bow and arrow, a snowmobile better than dogsled. However, much of social forestry is short on such well fit physical technologies and depends more on social technologies, better ways of organizing, new attitudes toward the commons, ecological connections between traditional behavior and hungry children. This is far from a plea for doing nothing, rather it is a plea that we do it right by recognizing that social technologies require different techniques of transfer.

Patterns of Adaptation to Change by Human Communities

One of the larger research literatures in social science has to do with the factors affecting adjustment to change by human communities. An analysis of this literature (Burch and DeLuca, 1983) suggests at least five patterns of adaptation: 1) in some communities a continuity in basic norms permits a smooth transition to changed conditions; 2) some communities have normative systems "primed" to take the induced change; 3) changes in the material structure alters the normative structure; 4) more successful adaptations have changes in social norms precede material changes; 5) in some communities rapid change, whether material or normative, improvement or decline, produces social fragmentation.

Some examples of these five patterns follow: 1) Bruner (1961) reports that the Toba Batak of Sumatra moved from a small, mountain village to a westernized, urban setting with minimum personal and social upset because they retained kinship as the major nexus of interpersonal relationships along with

patrilineal descent and traditional life crisis ceremonies; 2) Eskimo transition from dogsled to snowmobile, Plains Indians adoption of horse and rifle, Maori acceptance of the European sweet potatoe are communities where norms of hunting or mobility or a particular form of agriculture were "set" for innovations that enhanced existing norms; 3) A large number of anthropological community studies report extensive material changes are overshadowed by changes in outlook and social relations (Holmberg and Dobyns, 1962); 4) There are an even greater number of studies where the material changes outran the normative changes -- Sasaki (1956) describes the failure to transfer modern farm techniques to Navajoes because the prevailing norms favored smaller, more subsistence farming; and 5) The "boomtown" literature spawned by western energy development provides ample evidence of the need for appropriate timing of changes if severe social disruption is to be avoided.

Elements in the Adoption Process

The work of Rao (1971) serves as a base for reporting on what is known about the attributes of the five elements that influence the adoption process. His findings are grouped under these five elements. Those studies which were not directly relevant to the specific elements and any set of generalizations which did not have 10 or more empirical studies associated with them were ignored. Again, this is not a complete survey of work accomplished, rather it suggests the nature and trends in empirical studies on the topic.

The following discussion reports the total number of studies -- positive and negative -- that have dealt with the particular attribute and gives a percentage of all the completed studies that have reported a positive association with the attribute. The quality of each individual study less important than the particular trends all the studies indicate.

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Attributes of The Change Agent

The attached table summarizes what is known about the influence of particular attributes of the change agent upon success in the adoption process. As the table shows a great many possible attributes of the change agent have not been considered. However, it is important to note that the proposed change must be interpreted as being compatible with the clients needs and that a change agent who had had wide social participation (e.g. is part of the "community decision organization") has greater probability of success.

My point in this all too hasty overview is to remind us that social forestry already has a substantial data base that can be adapted to better guide project development, to design pre-project surveys, and to identify the best timing of technology transfer for the minimum of negative impact upon communities. Hoskins' example of women rejecting certain fast growing wood because it made the food taste like vaporub deals with social norms regarding taste and smell. Undoubtedly, there are communities (probably in the vicinity of Oxford) whose norms favor the taste and smell of vaporub. A reworking of the community literature could permit anticipation of such responses rather than the disappointment of failure, and another example of the need for community awareness in technology transfer.

Attributes of the Change Agent

<u>Attributes</u>	<u>Empirical Support</u>
Change agent's success is positively related to:	
Extent of effort	84% of 19 studies
Compatibility of change to client needs	100% of 10 studies
High social status among clients	86% of 33 studies
Greater social participation among clients	90% of 20 studies
Higher education and literacy among clients	74% of 43 studies

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Acceptance of collective innovation-
decisions are positively related to
degree of participation by members

91% of 11 studies

Attributes of The Innovation

The attached table stresses the perceived attributes of the innovation. It illustrates that the strongest support for an innovation is given to those innovations that seem to permit a trial run. The perceived advantage and compatibility of the innovation are of reasonably strong importance, while complexity of the innovation does not seem a great consideration. Consequently, it would seem that the soundest strategy would be the introduction of social/community forestry innovations that permit a trial run, where if the action is not satisfactory to the client it can be eliminated without great cost. Highly visible demonstration projects or small items such as solar cell cookers would seem important factors in encouraging the acceptance of an innovation.

Attributes of Information Source

A change agent who has the right credentials and an innovation that is right for a target population still must inform the population of the innovation. The attached table simply divides information sources into mass media and interpersonal contacts. There are not enough studies on adoption that refine the media into magazines, newspapers, television and so forth. Nor are there ample studies on whether contact with friends, kin or change agents are more significant.

The data suggest there is complementarity in the two sources of information. The media make an innovation known while contact at the

Perceived Attributes of the Innovation

<u>Attribute</u>	<u>Empirical Support for Association</u>
<u>Perceived Advantage of Innovation</u>	
positively related to rate of adoption	67% of 43 studies
<u>Perceived Compatibility of Innovation</u>	
positively related to rate of adoption	67% of 27 studies
<u>Perceived Complexity of Innovation</u>	
positively related to rate of adoption	56% of 16 studies
<u>Perceived "Trialability" of Innovation</u>	
positively related to rate of adoption	69% of 13 studies

Attributes of Information Source

Attribute	Empirical Support for Association
<u>Mass Media</u>	
Knowers: early have greater media exposure	63% of 29 studies
Adopters: early have greater media exposure	69% of 116 studies
media more important for early than late adopters	80% of 10 studies
<u>Interpersonal Sources of Information</u>	
Knowers: early have greater exposure	89% of 18 studies
Adopters: early have greater exposure 77% of 60 studies	

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Attributes of Opinion Leaders

A crucial link in the adoption process is the opinion leader. These are persons whose judgment is trusted and who are asked their opinion on various matters. The opinion leader may be a person in the 'invisible college' of scientists who knows the quality of research in various labs, it may be a local farmer who has consistently good crops or it may be an editor of a trade journal.

The attached table suggests that opinion leaders are likely to be well informed by the press and electronic media. They are likely to be more urbane and have higher social status. The strongest attribute is the innovativeness of opinion leaders. Apparently opinion leaders are willing to try new solutions and this willingness to try, reinforces their power as opinion leaders.

The studies suggest that early adopters have higher social status than later adopters. Age seems to have little influence upon adoption processes. Adopters have 'progressive' attitudes toward science, change and risk taking. And their life styles are progressive in that they are more cosmopolitan, less dogmatic and fatalistic and have high rates of social participation. The social context seems less important than the personal characteristics of the potential adopter.

Attributes of Opinion Leaders

<u>Attribute</u>	<u>Empirical Support</u>
Opinion Leaders are likely to:	
Have had greater media exposure	90% of 10 studies
Be more cosmopolitan	77% of 13 studies

Have more contact with change agent	77% of 13 studies
Have high rates of social participation	73% of 15 studies
Have higher social status	74% of 27 studies
Be more innovative	86% of 28 studies

Let me emphasize that I am merely using the resources I have at hand.

What we do know for certain is that there is a sufficient empirical research base that needs to be examined, consolidated, synthesized and used to direct project planning.

I agree with Jeff Romm that a forester, with extensive field work in a particular location has more first hand empirical social knowledge than the brightest, fresh in the dawn, social science consultant. However, I would add that it equally goes for any field centerpolyist or rural sociologist who probably knows more of the empirical botany, silvics and ecology of "their" people than the brightest, fresh in the dawn forestry consultant. What the field people need is some prior exposure to theory and methods of relevant academic knowledge -- so the learning curve can be speeded up, not all mistakes of similar projects need to be repeated and the field worker avoids thinking that the empiricis of a special case tells it all.

The community, ethnographic and adoption of innovation literature when synthesized to fit special needs of social forestry can mean more realistic project planning, sets of clues or questions to help the field worker prepare for action, and some base for evaluating progress of the project. Further, I like Hoskins distinction between community and social forestry because it commends our attention to the unit of adoption. Not all villages are communities -- with heads, arms and legs that can be aided by project field

persons. Indeed, most villages we made up of households, individuals, social roles, relationships and rules about appropriate and inappropriate behavior. The village elders may not like the idea of planting fast growing trees, but the young women of the village might very much like the opportunity for some fencing material to keep the pigs out of the garden. So part of the task in social forestry technology is in identifying the appropriate entry points for certain practices.

A Heuristic Model of Elements in Social Forestry Transfer

This "model" chart or what have you attempts to sum up the previous discussion. It really is a skeleton for including complexity, available social science literatures and speculation about some likely connections in the planning of a social forestry project.

The change agent must be a field person whose social and biological skills establish respect. A bio-social survey is conducted to determine what is biologically possible, socially adoptable, culturally acceptable and economically gainful. From this survey an array of possible innovations are selected. The survey suggests approaches in terms of local and mass media information campaigns, who to encourage to make the trial of the practice and the levels at which the innovation might be introduced.

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