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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

PROJECT PAPER

I N D I A
MAHARASHTRA SOCIAL FORESTRY
(386-0478)

USAID/INDIA
AUGUST 13, 1982

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AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET	1. TRANSACTION CODE <input checked="" type="checkbox"/> A = Add <input type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number _____ DOCUMENT CODE 3
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2. COUNTRY/ENTITY INDIA	3. PROJECT NUMBER 386 - 0478
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4. BUREAU/OFFICE ASIA 04	5. PROJECT TITLE (maximum 40 characters) Maharashtra Social Forestry
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6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 09 30 90	7. ESTIMATED DATE OF OBLIGATION (Under 'B' below, enter 1, 2, 3, or 4) A. Initial FY 82 B. Quarter 4 C. Final FY 84
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8. COSTS (\$000 OR EQUIVALENT \$1 =)						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	1,034	26,266	27,300	3,366	26,634	30,000
(Grant)	(1,034)	(1,266)	(5,000)	(3,366)	(1,634)	(5,000)
(Loan)	(-)	(25,000)	(25,000)	(-)	(25,000)	(25,000)
Other U.S. 1.						
Other U.S. 2.						
Host Country	-	30,000	30,000	-	30,000	30,000
Other Donor(s)						
TOTALS	1,034	56,266	57,300	3,366	56,634	60,000

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1)	283	160	160	-	-	5,000	25,000	5,000	25,000
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)	11. SECONDARY PURPOSE CODE 743
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12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)						
A. Code	BR	R/AG	PART	TNG	XII	
B. Amount	13,357	240	13,537	540	2,146	

15. PROJECT PURPOSE (maximum 480 characters)

Develop the institutional ability of the Government of Maharashtra to assist villages to manage communal and private lands for increased and sustained production of forest products.

14. SCHEDULED EVALUATIONS Interim MM YY MM YY Final MM YY 12 83 12 85 12 88	15. SOURCE/ORIGIN OF GOODS AND SERVICES <input checked="" type="checkbox"/> 000 <input type="checkbox"/> 941 <input type="checkbox"/> Local <input type="checkbox"/> Other (Specify) _____
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

17. APPROVED BY	Signature Title Director USAID/India	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION Date Signed MM DD YY MM DD YY
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Currency Equivalents

Currency Unit	= Rupees (Rs.)
U.S. \$1.00	= Rs. 9.40
Rs. 1.00	= US \$ 0.106 (June, 1982)

Weights and Measures

1 kilometer (km)	= 0.62 miles
1 meter (m)	= 3.28 feet
1 hectare (ha)	= 2.47 acres
1 kilogram (kg)	= 2.20 pounds
1 metric ton (MT)	= 2,204.00 pounds

Indian Fiscal Year (IFY)

April 1 - March 31

Abbreviations and Acronyms

AID	- Agency for International Development
APAC	- Administrator's Project Approval Committee
BTU	- British Thermal Unit
CIDA	- Canadian International Development Association
EGS	- Employment Guarantee Scheme
FAO	- Food and Agriculture Organization
GOI	- Government of India
GOM	- Government of Maharashtra
H&SFD	- Horticulture and Social Forestry Department
IRDP	- Integrated Rural Development Program
IRR	- Internal Rate of Return
M ³	- Cubic Meter
MIP	- Medium Irrigation Project
NCA	- National Commission on Agriculture
NCAER	- National Council of Applied Economic Research
OICD	- Office of International Cooperation and Development
PID	- Project Identification Document
SIDA	- Swedish International Development Agency
USAID	- United States Agency for International Development

Definitions

Block	- Administrative subdivision of a district comprising about 100 villages, and the level of delivery of State government services.
Block Development Officer	- State government official responsible for all developmental activities in a block.
Collector	- Senior civil servant at the district level.
Nistar	- Villagers' customary right of forest usufruct.

Definitions (continued)

Panchayat - Village level institution consisting of elected representatives.

Zilla Parishad - District-level political organization comprising panchayat representatives.

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INDIA



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MAHARASHTRA SOCIAL FORESTRY PROJECT
(386-0478)

I. Project Recommendation

Approval of a loan for a project to expand and strengthen a social forestry extension organization and reforestation program in the state of Maharashtra and a grant to finance resident technical coordination staff, technical exchanges and training for the project.

A. Borrower: The President of India

B. Implementing Agency: The Maharashtra Horticulture and Social Forestry Department (H&SFD).

C. Financing:

1. AID Contribution: Loan of \$25 million
Grant of \$5 million

2. AID Loan Terms: Repayment of principal and interest within 40 years, including a 10-year grace period for repayment of principal, with interest of two percent (2%) per annum during the grace period and three percent (3%) thereafter.

3. Borrower Contribution: \$30 million equivalent.

4. Total Cost: \$60 million.

5. Project Action Completion Date (PACD): September 30, 1990.

D. Life of Project: Eight years.

II. Summary Project Description

A. Project Purpose and Goals

The purpose of this eight year project is to develop the institutional capability of the Maharashtra Horticulture and Social Forestry^{1/} Department (H&SFD) to assist villagers to manage their communal and private lands for increased and sustained production of forest products. Achievement of the purpose will contribute to the goals of: (1) an increased supply of firewood, fodder, fruit, and small timber in rural areas; (2) a reduced rate of deforestation; and (3) an increase in rural employment. These goals are objectives of AID's development

^{1/}Social Forestry, a developing concept in India, denotes the cultivation and management of both traditional and non-traditional forest land by and for the local village community. Social forestry programs supported by the GOI and State Governments now exist in all Indian states.

strategy in India, and are accorded high priority by the Government of India. The project's purpose will be achieved through the development of a social forestry extension program that will encompass all 27 rural districts in Maharashtra including an estimated 4,300 village panchayats and roughly 6.5 million rural inhabitants.

B. Project Description

The development of an extension system designed to encourage and support the participation of villagers and farmers in reforestation efforts is an evolving process in India. The problems of deforestation, and the task of reforestation, are simply too complex and pervasive to be accomplished by government alone. Reforestation must involve the active and voluntary participation of the general population, in both private and public capacities, and it must encompass privately as well as commonly held lands. Often administrative and policy changes are required to facilitate the involvement of local villagers in the design, implementation and most importantly the distribution of benefits of local forestry programs.

Forests are productive assets from which rural inhabitants obtain their fuel, fodder, construction materials and many other requirements such as fruit, medical and culinary herbs, fiber vines for weaving, etc. Over exploitation leads not only to the reduced supply of these necessities but also to accelerated deforestation. By assisting its citizens to obtain plentiful and more conveniently located sources of these forest products, the government may be able to reduce pressure on forest resources and eventually halt deforestation.

Much of the land to be included in the reforestation program is now wasteland, land which is usually severely overgrazed and unproductive in its present state. Some of these lands are privately held; some are government owned lands and others are community land. Under this project these lands are targeted for rehabilitation through reforestation and careful management. Additional sources of forest products will be created through extensive planting of rail, canal, and road right-of-ways, as well as marginal farm land.

In this project institutional strengthening will be accomplished through a partnership of public sector resources and private initiative. The principal elements of the project are:

- (1) expansion and strengthening of a newly created social forestry extension organization, the H&SFD;
- (2) establishment of an Information and Technology (IT) Unit to support H&SFD's extension and management efforts;

(3) establishment of plantations on government, community and private lands with the assistance of the H&SFD as a means to develop the capability of villagers and their representatives to manage these resources;

(4) creation of nursery and plantation management skills in these communities to sustain a village reforestation program;

(5) provision of formal and in-service training of forestry professionals in the techniques of forestry extension, community mobilization and forestry technology; and

(6) applied research focusing on the technical and socio-economic aspects of social forestry.

The IT Unit will cooperate with the H&SFD to support effective development of an extension organization and program. Grant funds will finance a contract with a U.S. educational institution to provide the services of two long-term residents skilled in applied research and in forestry extension and training methodology. These individuals plus three Indian professionals of comparable background and a support staff will comprise the IT Unit. The Unit will collaborate with the H&SFD in developing an applied research program that will address socio-economic, silvicultural and related social forestry problems. The Unit will assist in identification of training needs and subsequently coordinate the corresponding training program. Institutions in India as well as in the U.S. and elsewhere in Asia will be involved in providing the necessary education and training programs. The Unit will be based in New Delhi.

During the eight years of the AID project, the program will expand to cover approximately 4,300 villages in all 27 rural districts of Maharashtra. The H&SFD will assist villages to establish their own nurseries to provide a variety of fodder, firewood and fruit tree seedlings, in support of reforestation programs on government, community and private lands. An average of 18.5 hectares will be covered in each participating village. In addition, small private nurseries will also be established in each village. The H&SFD will provide technical assistance in forestry operations and training and leadership to develop the ability of each village to manage its own social forestry program.

with the collaboration and cooperation of participating villagers and the panchayat, or village council, a management plan will be prepared describing the production and distribution of produce from the land to be brought under the program. Roughly half of the land, or approximately 9 hectares, is expected to be government or community wasteland or strips alongside roads, railway lines,

canals, etc. The other half will be in scattered plantings on private lands unsuited for agriculture, such as field bunds, farm yards and marginally productive fields.

All seedlings needed to initiate the village program will be supplied at no charge by the H&SFD, after the preconditions set out in the management plan, such as site preparation, have been met. Most of these seedlings will be grown in 54 district nurseries established by the H&SFD. In addition seedlings grown in privately operated village and school nurseries will be purchased by H&SFD for use during the first three years that the program is initiated in any village covered by the project. Private nurseries in each village will be sponsored by the H&SFD to create local seedling production capability and to encourage further private participation in an expansion of reforestation efforts supported by this project. However, after the three-year start-up period, each village nursery is expected to operate on a commercial basis. After three years when village nurseries and plantations are established, H&SFD staff activity at the village will be reduced to periodic visits to demonstrate innovative techniques or to respond to specific problems. Staff time saved by this reduced activity in an on-going village program will be used to start new programs.

C. Project Impact

At the end of the project, a social forestry institution (H&SFD) will have been strengthened with a well-trained and experienced staff capable of further expanding the social forestry program throughout Maharashtra. U.S. assistance will have been directed towards strengthening the monitoring and evaluation capabilities of the organization as well as developing training and research. Provision of these inputs will have contributed substantially to helping solve Maharashtra's social, economic and environmental problems associated with a declining forest base. At the end of eight years an estimated 81,000 hectares will have been planted and will be managed and operated not by the H&SFD but rather by the communities in or near which they are located. The area planted during the project will supply an estimated 4,300 villages and their 6.5 million inhabitants included in the program with 20 percent of their current average annual firewood needs. With the establishment of village nurseries, conditions for potentially doubling the amount of forested area under private ownership, from 36,450 hectares to 72,900 hectares, therefore benefiting an even larger percentage of the population, will also have been created. Employment generated from plantation work is expected to total 30 million work days over the life of the project.

The project increases the involvement of the private sector generally, and encourages private enterprise. The principal thrust of social forestry is to engage resources beyond those controlled by the

government in reforestation efforts. Roughly half of all the area to be planted under the project will be privately owned and privately managed. We expect, through research and demonstration of technology, further to extend both the ability and incentive for private production at the village level. Assistance will also be given to entrepreneurs in each participating panchayat to establish a small nursery. Each of these nurseries will be provided technical and financial assistance during an initial three-year start-up period, after which it will be expected to be self-sufficient and commercially viable. If the demonstration effect is as successful as is expected, general demand for seedlings will make the nursery business profitable, and will help further to spread private forestry programs on privately-held lands. Anyone who wishes to plant trees on his land should be able to purchase the required seedlings from a local commercial nursery. If demand rises beyond the ability of these nurseries, the prices will rise and new entrepreneurs will be encouraged to enter the business, further increasing supply and further spreading the concept and practice of social forestry.

In summary, the project couples a significant private sector initiative to the Government sponsored program of Social Forestry.

D. Project Financing

1. The AID loan of \$25 million will finance roughly half of local costs associated with establishing approximately 4,300 village programs. Vehicles, equipment and construction costs will not be eligible for financing. The grant of \$5 million will be used primarily to finance the foreign exchange costs of U.S. contractor services and the costs of overseas and in-country training.

2. The host country contribution of \$30 million equivalent will finance the balance of the costs of establishing approximately 4,300 village plantations and wholly finance the costs of vehicles, equipment and construction. The contribution more than satisfies the 25% requirement stipulated in FAA 110(a).

E. Project Issues

The PID and the APAC cable identified several issues to be examined during project design. The APAC cable also refers to the Madhya Pradesh Social Forestry APAC issues and instructs USAID/India to address these as well. Both cables are contained in Annex 1. The issues addressed in greater detail in the text of the Project Paper are summarized below.

1. Participation

A key element in contributing to the goals of increasing the supply of firewood and other forestry produce will be the participation of local communities in the project's reforestation program. Several different approaches will be employed to foster the collective, as well as individual, participation of the villagers. Most importantly the management plans approved by panchayats and the H&SFD will be an expression of a community's involvement in the identification of plantation sites, the determination of the mix of products desired and thus species required, the definition of the rights and responsibilities of the village panchayat and the H&SFD, and the decision as to the manner of distribution of the produce. ^{2/} The extensive information needed to prepare these plans will demand that the forestry extension worker serving the panchayat obtain assistance from the villagers. To reinforce further the concept of community participation, the H&SFD will turn over community plantation management to the village after three years if the panchayat has met specified conditions indicating administrative and fiscal responsibility. This will be a major departure from the current policy of retaining management of natural resources with central public authorities.

Community involvement will also be enhanced as villagers benefit from employment stemming from the establishment, management and protection of plantations. Participation will be encouraged in other ways by employing local villagers as "motivators" to reinforce the conservation message promoted by forestry extension workers.

To encourage individual initiative, interested local individuals and institutions will be given the technical and managerial assistance to support their establishment of local nurseries to meet local private demand for tree seedlings. The objective is to foster the general concept of participation by involving as many local villagers as possible in reforestation activities, including supportive private enterprise efforts. Sufficient precedent established through earlier GOI rural development programs such as Antyodaya and IRDP provides a socially sound basis for the encouragement of private nurseries with a minimum of disruption to local custom. ^{3/}

^{2/}Plantings on private lands will be considered in the management plan to insure a comprehensive approach to village program development. However, selection of individual village farmers to receive seedlings and technical support will be entirely the responsibility of the H&SFD.

^{3/}Under the Antyodaya program, a number of the poorest families were chosen to benefit from a variety of village based rural development programs to promote a greater degree of socio-economic equality. The Integrated Rural Development Program (IRDP) sought to coordinate the delivery of all government services at the local level. The result was establishment of block development officers as representatives at the block level of all state departments concerned with rural social and economic development.

2. Livestock Grazing

Small and marginal farmers in Maharashtra tend to possess more livestock per unit of land area than larger landowners. With less land they produce less agricultural residues and grass. Thus, their reliance on common lands for fodder is greater than any other group. As the Social Soundness Analysis (Section IV D) points out, this group could sustain the greatest losses as result of implementation of a community block plantation program due to restrictions on grazing. The plantation models suggested, however, are designed to provide a mix of short rotation fodder tree species and grasses. Grass production will actually increase in the first year due to the increased vigor of vegetation released from grazing pressure. Finally, the percentage of grazing land removed for social forestry will be a small percentage of that actually available.

3. Equity Considerations

Acceptance of the program will depend greatly on the distribution of project benefits, particularly with respect to employment and access to produce. Labor required for the plantations will come from villagers selected from an employment register kept in each panchayat under a unique Maharashtra program known as the Employment Guarantee Scheme (EGS) designed to provide job opportunities to low income groups. The H&SFD may also contract with existing forest labor cooperatives if warranted and acceptable to the panchayat. Men and women will be given equal pay for equal work at not less than the minimum rates set by the GOM.

The H&SFD is developing a formula for the distribution of produce, based on a standard household consumption profile in order to determine limits for individual household purchases. Priority will be given to the least well-off groups in the distribution of produce coming from government or common lands (see Section IV.D.3.b. for a more detailed discussion of this issue).

4. Project Incentives

The project involves the distribution of seedlings on a no-cost basis to beneficiary households over a three-year period. This approach is consistent with national policy which views free distribution of seedlings as a short-run incentive to greater participation by individuals in reforestation. After the third year, seedlings will be sold from private nurseries established under the project. Seedling costs amount to approximately 4% (\$2.5 million) of total project costs and are an important project incentive in light of the potential for accelerating the rate of reforestation of private lands (see Section IV.A., Institutional Analysis, for further discussion).

5. Mission Staffing

The APAC cable reflected concern for adequate Mission staffing to manage this as well as the Madhya Pradesh Social Forestry Project. In addition to the current U.S. forestry advisor position, USAID/India is actively recruiting an Indian national to assist with overall project management, particularly with respect to implementation functions such as field monitoring.

III. Background and Detailed Description

A. Background

1. Forestry in India

About 75 million hectares of land (185 million acres), or 23% of India's area, are classified as forest. Only 40-45% of this area is actually under adequate tree cover, and an estimated 20 million hectares are seriously affected by erosion. Thus no more than 12% of India's land area is forested, compared with a target of 33% recommended in the National Forest Policy as far back as 1952. In terms of per capita forest area, India ranks among the lowest in the world with approximately 0.5 hectares per person. The indigenous forests are concentrated in the "Dome Area" of central India (Madhya Pradesh and Orissa), the western Himalayas (Uttar Pradesh, Himachal Pradesh and Jammu and Kashmir) and the northeast (Assam and the other Indian states and territories to the north and east of Bangladesh). Coniferous forests comprise only about 5% of the forest area. Over 90% of the forests are owned and managed by state governments.

Forestry is an old and well-established activity in India. In 1865 the first Indian Forestry Act was passed to regulate exploitation of forests. A statement of National Forest Policy issued in 1894 emphasized the need to demarcate and conserve forests. A revision was issued in 1952 emphasizing the role of forestry in environmental protection. In the early 1970s, the National Commission on Agriculture (NCA) began an extensive review of India's forestry prospects and policies. Based on NCA projections to the year 2000, existing plantation programs will adequately meet industrial hardwood demand, but will meet only about half the demand for coniferous pulpwood and perhaps two-thirds of the demand for fuelwood. To ensure an adequate supply of pulpwood, 500,000 hectares will have to be planted by 1994; to meet the demand for fuelwood, an estimated 1,500,000 hectares will have to be planted annually. This compares with the establishment of an estimated 3.7 million hectares of forest plantations since Independence, of which approximately 1.5 million hectares was planted during the period from 1974-1979. (For additional details on India's forestry sector, see IBRD, "India: Forestry Prospects", Report No. 1745-IN, April 1978.)

The final NCA Report (1976) recommended that India's strategy for forestry development focus on "production forestry" to supply the growing needs of the domestic wood products industry and "social forestry" to supply fuelwood, fodder, small timber and other forest products to the rural population. It further recommended that each state reorganize its forestry department into production forestry and social forestry units. Many states have now done so, and large-scale social forestry projects are now underway with World Bank and other donor assistance in the states of Gujarat, Uttar Pradesh, West Bengal and Tamil Nadu. An AID-financed project in Madhya Pradesh is just getting underway.

As an indication of the importance to which the GOI attaches to social forestry programs, the Sixth Five Year Plan (1980-1984) identifies fuelwood, animal waste, and crop wastes as an indispensable source of energy for its rural population. About 90% of all rural households depend on these sources for their energy needs. The problems of a receding forest are therefore appreciated. The solutions proposed under social forestry programs are an important element in the GOI's plans for development.

2. Forestry in Maharashtra - Overview

Forests in Maharashtra cover approximately 21% of the total state area representing about 8.5% of total forest lands in India. Two forest types cover a major portion (80%) of the state. These are tropical-thorn and tropical-dry forests. Moist tropical deciduous forests are found along the coast and in the far eastern portions of the state and represent about 15% of the state's area. The remaining 5% of the state contains semi-evergreen forests and isolated areas of sub-tropical wet hill tracts located in the mountainous areas. Some 3% of the state's annual revenues are derived from its reserved forests. The major timber species are: Tectona grandis (teak); Dalbergia sissoo (sissoo); Terminalia tomentosa (ain); and Dendroclamus strictus (bamboo). Other important species include: Azadirachta indica (neem), Diospyros melanoxylon (tendu), and Gmelina arborea, Eucalyptus spp., Casuarina equisetifolia, and Leucaena leucocephala are exotic species that are gaining popularity in plantations.

3. Deforestation and Energy Use

More than 9% of Maharashtra's forested area (or some 207,000 hectares) has been lost to deforestation in the last 20 years. During this period there appears to have been little effort devoted to arresting deforestation. Reforestation activities were largely confined to replacement of higher value tree crops harvested for commercial purposes.

Maharashtra's forests are a major provider of fuelwood for its largely rural population. Based on the findings of a 1980 study by the National Council of Applied Economic Research (NCAER), firewood and twigs are the primary source of energy in Maharashtra's rural areas accounting for over 70% of all energy used. A critical gap, however, remains between the supply and demand for this energy resource, and strong efforts are being made by planning officials to meet shortfalls. Current estimates indicate a projected annual demand for firewood of 17 million cubic meters (m³); the state's reserved forests are only able to produce some 1.5 million m³. Other sources such as crop residues, dung, and shrubs are assumed to make up the difference. To meet projected shortfalls, an estimated 86,000 hectares need to be planted annually for the next 18 years for the restoration of a total area of 1.5 million hectares. The State Forestry Department estimates that about 2.4 million hectares are available for this purpose.

4. Social Forestry

Maharashtra has had a Social Forestry program for at least five years. In 1981 this program was reorganized under a new Horticulture and Social Forestry Department (H&SFD), separate from the Forestry and other departments. As the H&SFD is still relatively new and growing, AID has an unprecedented opportunity to participate in its development by providing needed technical collaboration and helping improve its responsiveness to the communities it will be serving. Conventional forestry management practices have tended to focus on increased timber production with technology unsuitable for social forestry objectives. Traditional "top-down" methods when employed by forestry departments in establishing reforestation programs have tended to be unsuccessful largely due to the absence of any community participation. Through the active collaboration of Indian rural communities in the planning and management of plantations, social forestry efforts have a reasonable chance of succeeding. Extension efforts will play a critical role in this process that is expected to lead eventually to village management of common lands.

5. AID Assistance Strategy

This project will strengthen the capability of the H&SFD to engage Indian villagers, in both public and private capacities, in the task of increasing the supply of energy in India. This will be done through the provision of limited amounts of financial and technical assistance. A continuously increasing supply of forest produce is necessary for rural households to meet energy requirements. To achieve this objective, extensive training in management and extension techniques as well as strengthened forestry research is required. Through this project the services of U.S. forestry institutions will be obtained to provide training and technical assistance for this purpose; its implementation will lead to a more effective institution, strengthened through technical collaboration with U.S. technicians and sensitive to the needs and perceptions of villagers.

The Mission's Country Development Strategy Statement asserts that India needs substantial assistance to meet its rural energy needs to stem the deforestation occurring throughout the country. These are areas in which U.S. technology is well developed. Social forestry, engaging villagers and their private and community lands in the production of needed forest products, presents opportunities to which AID can respond with applicable and appropriate silvicultural, managerial and social technology. Accordingly, the project is fully consistent with and supportive of the Mission's approved development strategy. It is in keeping with AID's broader policies of focusing on the private sector as a productive agent in development, emphasizing the transfer of technology and developing the institutions necessary to sustain growth beyond the life of the project.

B. Detailed Description

1. The Project - Logical Framework Narrative

(See Annex 2 for the Logical Framework Matrix)

a. Goals

The principal goals to which this project will contribute are: (1) an increased supply of firewood, fodder, fruit, building timber and other minor forest products in rural areas; (2) a reduced rate of deforestation; and (3) an increase in rural employment. These goals are consistent with the high priority the GOI attaches to the importance of arresting present deforestation trends, increasing the supply of energy resources, and increasing employment generation.

b. Purpose

The project's purpose is to develop the institutional ability of the Government of Maharashtra to assist villagers to manage communal and private lands for increased and sustained production of forest products. This purpose will be achieved through the collaborative development and transfer of knowledge, involving U.S. and Indian specialists in developing a social forestry staff trained in the methodologies of extension and community organization at all levels of the H&SFD. Specialized training in the principles of extension and forestry will be emphasized for personnel directly involved in working with villages and individual farmers.

c. Outputs

Collaboration between Indian social forestry specialists and U.S. forestry, community development and other technicians will, in the course of developing this institutional capacity, produce the following outputs:

(1) Approximately 4,300 community plantation programs, involving varying combinations of government, community and private land, and consisting of a mix of firewood and fodder species, fruit trees, and trees to be used for household construction and agricultural implements, covering 81,000 hectares;

(2) 54 regional and approximately 4,300 village nurseries for the supply of seedlings for local plantations;

(3) Research on socio-economic, silvicultural and extension problems designed to enhance the effectiveness of the social forestry program;

(4) A well-trained and experienced extension staff with on-going social forestry program in all 27 districts of Maharashtra.

2. End of Project Status

If these outputs are achieved, the conditions will have been created for achieving the project's purpose at the end of eight years. A brief discussion of these conditions are as follows:

a. A fully staffed and functioning institution will have been established, capable of working with villagers throughout rural Maharashtra to plan and implement social forestry programs.

b. Nurseries, both private and public, will be meeting the demand for a variety of tree species and products.

c. Demand for seedlings will be increasing, reflecting increased interest in forestry by villagers throughout Maharashtra.

The H&SFD intends to continue the establishment of village programs until all 25,000 panchayats in Maharashtra have had an opportunity to participate. The H&SFD has prepared a long-range plan under which all will be covered by the year 2000.

3. Project Beneficiaries

Since project plantation yields will not be sufficient to supply all village needs, a system of distribution priorities has been established. Landless laborers and small and marginal farmers will get first priority in the distribution of produce and also will be the primary beneficiaries from employment created. Private nursery owners will be sought from low income socio-economic groups. Project mid-term and subsequent impact evaluations will examine the degree to which equity is being achieved from project resources.

4. Project Elements

a. Plantation Development

Each panchayat program will include one or more of the following types of plantings. Of the total area to be planted, 47 percent is expected to be in block plantations and an additional 47 percent on private lands.

(1) Block Plantations

Block plantations are designed to be labor-intensive, utilize indigenous species, provide a variety of products, and offer relatively quick returns.^{4/} Fuel and fodder species are expected to occupy approximately 90% of the actual area available for planting. Improved fodder grasses for stall-feeding will be introduced into reforested areas to increase fodder output and compensate villagers for the loss of grazing land in the early years of the plantation. At a later stage, additional fodder will be available from tree foliage. Total area covered by block plantations will be a little over 38,000 hectares, or about 47 percent of the total.

(2) Reforestation on Private Lands

Trees will be planted on privately owned lands, such as field bunds, land adjacent to farm structures, small uncultivated patches or lands of marginal agricultural value. Seedlings will be made available initially through H&SFD nurseries and later by private nurseries. The Assistant Plantation Officer, the principal forestry extension worker, will provide the technical information to farmers to assure optimum growth.^{5/} Approximately 38,000 hectares will be grown on private lands.

(3) Strip Plantations

Strip plantations will be grown on relatively good soil. In the case of plantings along canals, access to irrigation will be fairly easy affording rapid growth and quick returns. Strip plantations located along public routes are apt to be viewed by a large audience. In addition to their socio-economic benefits, they have an added advantage of serving as demonstration plots. In other social forestry projects, these types of plantations have been a major induce-

^{4/} Labor costs are estimated to account for about 90% of total costs in the planting of seedlings and in the digging of trenches along plantation perimeters for protection against livestock.

^{5/} The H&SFD considers the planting of 1,600 trees in scattered plantings to be the equivalent of one hectare of block plantation.

ment to the growth of private forestry programs. Strip plantations in most cases will be located within the boundaries of village areas; their benefits will accrue to villagers. Special efforts will be made to support strip plantations in the command areas of irrigation projects being financed under a companion project, Maharashtra Irrigation Technology and Management (386-0481). Total area planned for strip plantations will cover over 3,000 hectares by the end of the project.

(4) Soil and Water Conservation

Some soils within the project area have been so heavily eroded that their productivity is nil. These areas will be rehabilitated when they are part of panchayat common lands or public land vested in government and scheduled for use in the social forestry program. The primary objective of this type of program will be environmental rehabilitation. Production of firewood and fodder is not expected to be substantial. Approximately 550 hectares are expected to be treated under this type of program.

(5) Demonstration Plantations on Land Belonging to Scheduled Tribes and Scheduled Castes

The Scheduled Tribes (Adivasis) and Scheduled Castes are among the poorest segments of the population in Maharashtra. In many cases they live on lands that are of poor quality for agricultural production but can sustain forest production. Special pilot programs will be supported under the project to demonstrate ways to increase the productivity of private lands. Approximately 820 hectares will be devoted to this program.

b. Nursery Production and Management

H&SFD will establish 54 district nurseries (two per district) with an annual production of 76 million seedlings primarily for the plantation program on community and government lands. This level of production will be adequate to augment the privately owned village nurseries should there be some failures. (Production costs for seedlings are contained in Annex 3.) For the first three years of the private nursery program, the operator will be given the seed, fertilizer, and plastic bags required, along with needed instruction. Using private land and labor, he or she will produce about 5000 seedlings per year. The H&SFD will purchase these seedlings at a price equal to H&SFD production costs less the costs of materials supplied. As an incentive the villager will be paid in six installments, evenly spaced over a six-month production period. Fifty percent of the total payment is received upon delivery of acceptable seedlings. After three years of production, these nurseries are expected to be self-sustaining and no further government support will be required (see Investment Analysis, Section IV.B.2.).

About 4,300 of these private village nurseries will be established during the project period. Collectively, they will produce 65,000,000 seedlings, a significant portion of the project production. Most importantly, they will develop expertise in nursery production methods at the village level and provide employment to a minimum of 4,300 persons. This production scheme is a key element in developing the expertise for continuing the program after the project is completed.

c. Research, Training, Technical Collaboration

Research topics will cover a wide range of multi-disciplinary technical forestry and social science topics. In recognition of the importance of research functions, a special unit will be established in the H&SFD. The research program may include such activities as species trials, experiments with nursery production and planting methods, and other studies such as investigation of household fuel and fodder needs (see Section IV.A. for more details).

Training will be conducted in India, other Asian countries and at U.S. academic institutions. Both long and short-term training will be provided. Long-term training in the U.S. will lead to a limited number of graduate degrees in forestry and social sciences; short-term training will focus on basic extension and communication methods. In-country training will range up to a year in duration and will involve study tours, workshops, seminars and classroom instruction. While existing forestry curricula are adequate to provide a basic knowledge of silvicultural techniques, they lack an emphasis on community organization and extension. These important disciplines will be emphasized in all training provided under the project. During project implementation, a detailed training plan with a list of events and a schedule for their completion will be prepared by the H&SFD, with the assistance of the resident U.S. training specialist (see Section IV.A.).

Technical assistance will be provided both by resident specialists, U.S. as well as Indian, stationed in New Delhi, and by short-term experts contracted as needed (see Section VI.B. for more detail).

5. Other Donor Activities in Maharashtra

As currently contemplated, AID will be the only donor engaged in social forestry activities in Maharashtra during the next few years. The GOI's Sixth Five Year Plan calls for social forestry programs in all of India's major states. In fulfilling these objectives, several donors have been requested to provide assistance in states assigned by the GOI to them. Among other donors involved are the Swedish International Development Agency (SIDA) in Tamil Nadu, and the World Bank in Gujarat, Uttar Pradesh, and West Bengal. These other donor projects

utilize similar basic institutional approaches to social forestry development. Community participation, technology transfer, training, and applied research, however, receive considerable emphasis in AID's projects.

AID is concurrently supporting an irrigation project in Maharashtra, under which thirteen medium irrigation projects (MIP's) will be designed and construction initiated on a prototype basis. Special efforts will be made to coordinate social forestry and irrigation activities within the command areas of the prototype MIP's. This will be especially useful because community organization is a key element in the efficient use of irrigation water, and a principal component of the irrigation project is to seek ways to organize irrigators.

IV. Summary Project Analyses

A. Institutional Development

1. Introduction

The major emphasis of this project is the adaptive transfer of technology through institutional development. At the state level, this will be accomplished primarily through the expansion of the H&SFD and the enhancement of its extension, training and research programs. These programs have been designed to strengthen or modify current institutions and to augment these with new institutional components where appropriate. The net effect of these efforts will be to strengthen the institution supporting community production of firewood and other forest products.

2. Extension Program

a. Purpose and Strategy

The purpose of the extension program is first to introduce to rural communities the social forestry program including its goals and methods, and then to provide the needed materials and expertise to assist people to manage their own self-help projects. The extension program established by the GOM through the H&SFD will be the key element necessary to achieve AID project goals. Extension is a process in which the target group actively participates and contributes, as opposed to a process in which recipients are merely provided information and services. This is done with people rather than to people, and requires both an extension delivery and receiving system. The delivery system will consist of the program and staff of the H&SFD, while the panchayat staff and program will comprise the receiving system. To be effective, the program will have to require substantive interchange and collaboration between the H&SFD and the panchayat.

b. Delivery and Receiving System

The H&SFD, as described below, has been organized to serve as a delivery system. Line and staff officers above the district level (see organization diagram, Annex 4), provide administrative direction and support services, e.g. research public relations and technical guidance. District officers provide program direction and coordination with other governmental agencies and development programs. These officers also supervise the operation of district nurseries. Staff officers from the training, research and monitoring offices provide in-service training, information and trouble-shooting assistance, respectively. Public relations officers assigned to the district office will assist with local media campaigns and will deal with public relations problems as they arise.

The basic organizational unit of the extension effort and outreach is at the block level. The block level delivery system staff consists of the Plantation Officer (PO), the Assistant Plantation Officer (APO), the promoter and motivator. These individuals are responsible for day-to-day execution of the program and the care and nourishment of the panchayat H&SFD relationship.

The authority and organizational basis of the receiving systems will emanate from the village panchayat. With support and training from the H&SFD extension staff, villages will work with the APO learning both technical and managerial aspects of forestry operations. To encourage private sector involvement, the H&SFD will assist villagers in the establishment of small private nurseries. Similar seedling production programs will be established at schools and other institutions where there is interest.

c. Staffing

The H&SFD was created by the GOM in July 1981. This agency has been assigned responsibility for social forestry and related programs previously administered by the Maharashtra Forestry Department. The H&SFD is moving ahead with development of its program and organization with assistance from the Forestry Department including the temporary loan of staff.

When the H&SFD was created it was recognized that staff recruitment and training would require several years. The GOM therefore provided for the temporary transfer of Forestry Department personnel to H&SFD to facilitate implementation. Most of the officers have been assigned to the H&SFD from the Maharashtra Forestry Department for a 2-3 year period. By October 1, 1982, a complement of approximately 1600 persons, sufficient to implement this project fully in the State's 27 districts, will be in the field. Prior to March 1984, the transferred

Forestry Department staff will be given the opportunity to remain with the H&SFD or return to the Forestry Department. This cooperation between the two departments will permit the rapid initiation of the project with a full staff and the gradual phasing out of Forestry Department staff electing to return to their home agency. (A complete listing of staff is contained in Annex 4.)

d. Implementation

(1) Planning and Coordination

Planning of a village forestry program will be done through preparation of a management plan. The plan will be prepared by the Plantation Officer and APO in collaboration with the villagers. The reasons for preparing a management plan are threefold. These are to:

1. insure comprehensive and coordinated planning rather than single objective, single agency or single resource planning;
2. define clearly the production targets, input requirements and administrative responsibilities for the program, as well as the methods for disposing of produce; and
3. involve the village in the design as well as the implementation of the project so that it can gain administrative and technical expertise relative to forestry.

Coordination of the extension program with local government will be extremely important both to gain support and to provide for direction and efficient use of resources. In Maharashtra there exists a number of agencies at the district and block level which provide avenues for program coordination and feedback. Coordination with local government will be the responsibility of the H&SFD Director assigned to each District. Interaction between the Deputy Director and the District Planning & Development Council (DPDC) headed by a local minister with access to the Council of Ministers will be extremely important. Similarly, exchanges between the Zilla Parishad, the Collector and the Deputy Director will be important. Beneficiaries of the program, the panchayats and their constituents can make their concerns known through the Collector, the District Social Forestry Committee, the Zilla Parishad and the DPDC, in addition to direct communication channels through the H&SFD. Hence, there is substantial opportunity for feedback to the H&SFD and the need for coordination should be served by existing organizations.

(2) Promotion and Incentives

A state-level promotional program will be designed during the first year of the project, using both H&SFD staff and consultants. This program will publicize the goals and objectives of social forestry, emphasizing especially benefits to the rural population. Subsequently, promotional efforts will be concentrated on special problems, e.g. why plantations should be protected from cattle, fire, etc. or to special audiences, e.g. the benefits of social forestry to the landless, to women or to children.

The program to be undertaken by the H&SFD will provide direct incentives in the form of: (a) seed and seedling distribution to communities or individuals; and (b) employment opportunities in the planting and protection of the plantations. Plant materials will be supplied during the first three years of each village program in amounts specified in the management plan. Most of the employment generated and wages paid in any village program will be during the first two years of the project. Wages for protection, however, will continue over the life of the plantation.

Administrative incentives such as assurance of equitable distribution of produce and continued technical assistance will also be included. This combination of material and administrative incentives has been carefully structured to initially motivate the people and obtain their long-term program support.

(3) Training Program

a. Need and Purpose

The purpose of the training program is to meet the needs of both the village and the H&SFD in all areas pertinent to social forestry. Training at the village level will be done as part of the extension effort, primarily by the Assistant Plantation Officers (APO's). It will emphasize nursery and plantation establishment and management. These concepts will be conveyed largely through discussion and demonstrations as a part of the village plantation program. However, there will be two short courses, one for the village "motivator" and the other for the village officials. These will be used for orientation and motivation and are described more fully in paragraph c. below.

Training within the H&SFD will emphasize extension concepts and methods needed to communicate and enlist support from the program participants. Most H&SFD staff will be drawn from the Maharashtra Forestry Department (MFD) and will have substantial field experience in technical aspects of forestry. Some will have had experience with socially oriented programs, but very few will have had formal training in extension. The normal role of a forest officer

includes a police power given him as a means of enforcing protection of government property. Under the proposed H&SFD program, these officers will now be expected to solicit cooperation from the pan-chayats and establish and protect plantations with minimal use of police powers. This will require not only additional skills in communication and community organization, but also a reorientation of philosophy and approach.

b. Implementation

The overall strategy for training, given the large initial needs and the recurrent but diminished need, is to assign a small number of H&SFD staff to operate the program on a continuing basis and augment this staff with the assistance of local educational institutions as needed. The H&SFD staff would have overall responsibility for administration and implementation of the program but would use, in addition to its own staff, other subject matter experts, e.g. curriculum development specialists, extension personnel for design of specific courses and overall program evaluation.

Training within the H&SFD will commence as soon as appropriate courses can be developed and instructors assembled. The training Unit will initially rely heavily on U.S. and Indian subject matter specialists supplied through the IT Unit for course development. Instructors will be obtained on deputation from educational institutions, from the H&SFD staff and by contract. A preliminary training schedule is on page 23. A more detailed training plan satisfactory to AID will be developed by December 31, 1982.

c. Types of Training

The program for H&SFD staff will include both Indian and overseas components and involve both in-service and academic training.

(1) Training in India

a) Senior Management Seminars (2 weeks) providing training in public or development administration or related topics at an Indian management institute.

b) Senior Staff Extension Program Management (3 weeks) offers an introduction to extension methods and philosophy and emphasizing administrative and personnel requirements. For staff and Plantation Officer level and above.

c) Plantation Officers Extension Course (6 weeks) includes intensive instruction in extension methods, rural sociology, communications, local government, and nursery and plantation management practices. Orientation to the H&SFD organization, objectives and program are also provided. This course will service PO's and APO's but would also be suitable for more senior officers.

d) Technical Training Courses (6 days) in specialized areas, e.g. agro-forestry, seed production, accounting procedure, human ecology, design of survey instruments (questionnaires), for selected groups of staff according to individual need.

e) Extension Instructors Shortcourse (3 weeks) provides directions and methodology for staff responsible for continued training of extension field staff.

f) Staff Motivational Workshops (2-10 days) offers extension personnel (PO and APO) to receive periodic additional training in needed special skills identified through evaluation programs. Also provides opportunity for disseminating new ideas, remedial training, if necessary, and for "feedback" discussion sessions with senior staff as part of the evaluation process.

g) Motivators Orientation (3 days) orientation course for villagers serving as motivators. Explains their role and suggests alternative means of maintaining interest in program.

h) Local Government Officials Demonstration (1 day) Motivation and demonstration sessions, explaining the social forestry program and its operation for panchayat members or other representatives of local government.

Because of the on-going nature of the social forestry program, it is not possible to train all field technicians prior to initiating a "project cycle" in the target villages. In fact, it is probably undesirable to provide all extension and management training in advance of the field work. This project will employ a "sandwich" approach to training Plantation Officers, Assistant Plantation Officers and senior staff. These personnel will not receive all the relevant training at one time; rather training sessions will be scheduled at convenient intervals both prior to and following actual field work in target villages. The advantage of this approach is to combine practical field experience which staff can share among themselves in formal training sessions with actual skill and management training. This will increase both the impact and relevance of the training.

Training sessions are expected to occur during slack periods between sowing and harvest. These are the periods when there are few if any intensive planning, weeding and planting activities.

The PO's and APO's should participate in the staff motivational workshops and motivators orientation first, and then receive the extension courses at a later stage. There will usually be a gap of one planting year between their receiving motivational courses and the extension/management training due to the large numbers that must be trained. This is actually desirable so that full advantage may be taken

of the "sandwich" approach. There may be a small number, however, who go through two or more management planning and tree planting cycles prior to the follow-on training. The training plan will attempt to stage the courses to minimize this occurrence.

The numbers in the table on page 23 include an estimate of 2-3% attrition of volunteer village motivators.

(2) Overseas Training

The purpose of the overseas training component is to furnish access to specialized training and to permit first-hand study of U.S. and third country technologies and institutions by H&SFD staff.

The overseas training program involves both academic and non-formal training in the U.S. and other countries as approved by AID. Academic training will involve training at institutions of higher learning and will include degree and non-degree programs. Monies budgeted for non-degree training may also be used for study tours where non-formal training takes place in the form of travel and consultation. Itineraries for study tours will require concurrence by AID.

Coordination of overseas training and travel will be accomplished through the IT Unit. The Unit will work with the H&SFD in identifying training needs and sources of the needed instruction. The Unit will respond to nominations from the GOM/GOI and upon concurrence of AID, arrange travel and overseas instructional programs.

The U.S. training will focus on the social sciences and forestry and related subjects. These may include but are not limited to:

Forest Genetics	Forest Management
Nursery Production	Rural Sociology
Silviculture	Human Ecology
Watershed Management	Extension
Range Management	Land-use Planning
Agro-Forestry	Economics

The degree programs will be used to develop special expertise not presently available within the H&SFD. Assistance for degree programs constitutes a limited but longer term investment in the social forestry program. This training component will be used to develop expertise in such areas as forest genetics and tree breeding, forest management and forestry extension. Assistance is budgeted for 72 months of degree training. Funds for 182 months of non-degree training are budgeted. These short-term training opportunities provide for more rapid acquisition of skills and motivation. Non-degree training will be done primarily with U.S. institutions but will also include study-tours to selected Asian countries with expertise in community organization and forestry extension. Courses offered at U.S. universities under the USAID/OICD program will be

utilized along with appropriate FAO programs. The U.S. training programs (non-degree) will be developed by the IT Unit in conjunction with the needs of the trainee, the H&SFD program and the U.S. institution concerned. In most cases, these non-degree programs will involve formal classroom instruction and field work, based on subjects listed above.

d. Proposed Training Schedule

	Expected Number of Participants	Average Course Duration (Days)	Estimated Number of Participants by Years						
			1	2	3	4	5	6	
a) Sr. Management Seminars	50	14		10	20	20			
b) Sr. Staff Extension Program Management	200	21		40	80	80			
c) Plantation Officers Extension Course	750	42		78	222	150	150	150	
d) Technical Training Courses	100	6		20	40	40			
e) Extension Instructor Short Course	50	21		14	24	12			
f) Staff Motivational Workshops	1000	10		100	300	200	200	200	
g) Motivators Orientation	4500	3		450	900	900	1125	1125	
h) Local Government Officials Demonstration	3000	1		250	350	1150	1000	250	
<u>OVERSEAS</u>									
a) Degree Program 36 months	2	-		2	2	2			
b) Non-Degree Program 12 months	6	-		2	4				
3 months	20	-		5	7	8			
1 month	50	-		10	15	15	10		

4. Research Program

a. Organization and Administration

Social Forestry, an evolving concept in India, has gained popular support because of its potential for meeting the forest product needs of the rural population. To realize this potential the new social forestry programs must be able to respond to technical and social problems as they arise. Accordingly a monitoring and evaluation program will be incorporated into the project by H&SFD in order to identify and address such problems. The primary purpose of the research program described below will be to address the managerial and technical constraints encountered in the implementation of the project.

A small research Unit will be established within the H&SFD to conduct in-house research and to design and manage contract research funded by the H&SFD. The purpose of this arrangement is to maintain in-house expertise which can contribute through departmental research and also serve as a bridge to the external research community. The staff will consist of three research scientists, a nursery management specialist, and a small professional support staff consisting of four research officers. The Unit will be headed by a Joint Director of Social Forestry (JDSF).

To facilitate collaboration with other scientists and the management of contract research, the Indian staff, i.e. three social scientists, an economist, an extension specialist and a human ecologist/development specialist, will be housed at research or educational institutions in Maharashtra. The nursery management specialist and the forestry officers will be located in Pune to facilitate travel throughout the State.

b. Program Development and Funding

Detailed research program design will proceed using H&SFD staff and consultants supplied through the IT Unit. A team of H&SFD staff and consultants will draft an initial action program, establishing priorities for the needs listed below and developing research strategies to ensure the best use of H&SFD staff and U.S. and Indian contract institutions. Priorities will be established based on informational requirements of field staff. Funds for specific research will be tentatively designated. Upon acceptance of a specific research project and work plan by the Secretary of H&SFD with AID concurrence, the final project budget will be approved.

In addition to staff salary, consultant services and operational expenses included in other parts of the budget, a program budget of \$1.19 million has been designated for the research Unit.

Approximately \$190,000 has been included in the line item "Research and Seed Processing" to cover the contingency need for seed processing, storage equipment and research. A tree seed processing consultant's report on this topic will provide the basis for a final decision on the use of these monies. The need for seed processing and storage is described in the technical analysis section of this report.

c. Research Needs

An applied research program addressing socio-economic, silvicultural, administrative, and policy problems is planned. This program will be coordinated with the monitoring and evaluation program and concentrate on short-term projects which can provide feedback to the operational program.

Research needs identified by the GOM and the AID Mission include, but are not limited to, the following subjects:

A) Socio-Economic

1. Household fuel consumption rates and preference
2. Firewood market structure
3. Distribution of benefits from social forestry programs
4. Response to administrative material and monetary incentives
5. Effect of species mix on physical and fiscal benefits from plantations

B) Silviculture

1. Nursery and planting techniques
2. Species trials
3. Production increases from irrigation
4. Seed selection, processing and storage
5. Intensive silvicultural systems for firewood
6. Insect and disease damage potential

C) Administration and Policy

1. Alternative administrative roles for district level line and staff extension workers
2. Potential impact of the conversion of agricultural land to farm forestry
3. Incentives to encourage community and private forestry
4. Effects of government firewood supply programs on firewood production and consumption

5. Comparison of village councils or panchayats versus village cooperatives as receiving systems for extension programs
6. Staffing levels and organizational requirements for areas with established social forestry programs.

B. Investment Analysis

1. Overall Project: Panchayat Plantations

a. Analytical Approach

The project is analyzed from two perspectives. First, a financial analysis focuses on actual cash costs and revenues that would accrue to a private entrepreneur. Prevailing market prices are used in this analysis. Second, an economic analysis measures returns that would accrue to society as a whole, i.e. from the perspective of a Government. Shadow prices rather than market prices are used, taking into account such market distortions as taxes and government controlled prices. Finally, calculations are made to determine the sensitivity of project feasibility to various assumptions of discount rate, plantation costs and the level and timing of yields.

The project is then examined at three levels. First, individual village plantations of various types are analyzed. Subsequently the aggregation of these plantation types is investigated to determine feasibility of the plantation program as a whole. Finally, an analysis of the total program including administrative and overhead costs is conducted to assess the project's contribution to Maharashtra's economy.

b. Analytical Results

(1) Individual Plantation

Each individual plantation model is analyzed as an independent investment on a per hectare basis. Internal rates of return (IRR) for individual plantation models in the financial analysis ranged from a low of 6.7 percent for strip plantations along railroad rights-of-way to a high of over 50 percent for irrigated plantations on high productivity sites. In the economic analysis, the internal rate of return for plantations along railroad rights-of-way is 11.4 percent.

(2) Plantations Aggregated

The plantations are then examined in the aggregate, with the aggregation being done according to the proposed schedule of plantation establishment. This analysis reflects the investment potential of the total plantation scheme of the project. Internal rates of return of 27.6 and 35.9 percent are obtained respectively for the financial and economic analyses.

(3) Overall Project

The overall project, including the proposed plantation scheme and the costs of establishing the necessary infrastructure to implement the social forestry program, is analyzed. The results for the total project include an internal rate of return of 16.9 percent for the financial analysis and 20.1 percent for the economic analysis.

c. Unquantified Factors

These analyses include only those benefits and costs that are readily quantifiable. The unquantified benefits and costs are not addressed. Such benefits include, for example, employment and income generated, watershed protection and a decrease in the degradation of existing forest lands. Similarly, unquantified costs include removal of land from that available for open grazing, added managerial workload for the panchayat, etc.

d. Sensitivity Analysis

A sensitivity analysis that varied four project-related factors was conducted for the project. The discount rate was increased to 14 and 16 percent. Plantation costs were increased by 25% and as much as 50%. The project's benefits in terms of plantation produce harvested and sold were reduced by 20 percent and as much as 40% for each type of plantation model. Reductions reflected a fall in prices below current values. A one and two-year delay in the flow of benefits was analyzed in completing the sensitivity analysis. The overall results were positive and reaffirm the attractiveness of the project as an investment for AID and the GOM. The only negative result came about from a 40% reduction in benefits, a situation that reflects a very pessimistic assumption and one that is unlikely to occur.

e. Conclusion

The project is an attractive investment and a potentially sound use of AID resources.

2. Village Nurseries

An important element in the project is the provision of seedlings to individual farmers within the villages. Private nurseries will be established with H&SFD assistance in support of the regional nurseries owned and operated by the H&SFD. Private nurseries will not only augment the supply of seedlings but will also serve as a focus of institution building efforts. A primary objective in their establishment is the development of local capability in nursery management as an adjunct to developing overall capability of the village in plantation management. As an inducement to private individual cooperation and involvement, the H&SFD will bear the costs of the first three years of nursery operation. Each nursery will have the capacity to supply 5,000 seedlings a year. At the end of the three years, nursery operation will be taken over on a commercial basis by the individual owner. These persons, designated by the APO and motivator, must be from low income groups and be able to provide land and labor and have access to water. They will be provided materials, such as plastic bags and seed, by the H&SFD which will in turn purchase the seedlings at a price equivalent to the H&SFD's production costs less the cost of materials. The seedlings will then be distributed over a three-year period to farmers who have demonstrated interest by completing site preparation. Thereafter, seedlings will be produced and sold on a commercial basis in response to increased demand.

During the initial three-years of each village program, the H&SFD will purchase seedlings produced to Department standards at a price no less than its own production costs. Nursery owners will be paid an estimated Rs.0.25 (2.5¢) for each seedling. Costs of materials provided by the government are expected to average about Rs.0.15 per plant. Hence a nursery owner can expect a nominal return of Rs.0.10 (1¢) per seedling for his effort. If 5,000 seedlings are purchased by the government from the nursery, this amounts to an annual income of Rs.500 (\$53) or Rs.41 (\$4.43) on a monthly basis. This is almost three times the average monthly expenditure of families below the poverty line as defined by Indian Standards (see summary, Social Analysis, section IV.D.).

After the three-year start-up period, seedling prices will be set by individual operators according to production costs and demand. Production costs under independent management are not expected to be significantly less than with government support. Therefore profit will be determined largely by the market. Within three years, owing to the demonstration impact of the project, villagers not included in the initial program or wishing to plant additional land are expected to create sufficient demand to insure continued and profitable nursery operations (see Annex 3 for details of nursery costs).

The size of an average nursery (approximately 100 m² or 0.01 hectare, about half the size of a tennis court) will be small enough to permit effective management yet should not compete with areas for crop

cultivation. The APO in cooperation with the village motivator will transfer basic technical knowledge for the proper management and care of the nurseries. To assure this is the case, an incentive system based on a sliding scale of payments to the nursery operator is proposed. For example, he will be paid 10% of the total purchase price of the 5,000 seedlings for each of 5 months or 50% of the total price at the end of this period. The operator will then receive the other 50% by the sixth month if the condition of the seedlings is satisfactory. These seedlings will then be distributed by the H&SFD to interested farmers.

As described above, the costs to the project to develop private entrepreneurial initiatives and to induce individual participation are minimal (only 4% of total project costs), in return for the potential of achieving a greater spread effect of the program while providing an additional source of income for villagers.

C. Technical Analysis

1. Physical Characteristics of Maharashtra

a. Physiography

Located in central India, the State of Maharashtra is bordered on the west by the Arabian Sea. It is bounded by the States of Gujarat in the northeast, Madhya Pradesh to the north and the east, and Andhra Pradesh and Karnataka to the south. The Western Ghat Mountains along the coast of Maharashtra are the dominant feature of the State. These relatively low mountains, only in a few places exceeding 1,000 meters (3,300 feet), have a profound effect on the climate of much of the State. The coastal region, generally less than 300 meters (1,000 ft.) in altitude, is known as the Konkan Region. Bounded on the west by the Arabian Sea and the east by the Western Ghats, it is now almost denuded of forests. The Deccan Plateau stretches to the east of the Ghats and to the south of the Satpudas Range. The Tapi Trough is a transition zone between the central Indian plains and the Deccan Plateau.

b. Climate and Rainfall

There are three seasons in Maharashtra: the cold season, from mid-October to mid-February; the dry season, from mid-February to mid-June; and the monsoon season, from mid-June to mid-October. Eighty percent of annual rainfall comes during the monsoon season. Rainfall can exceed 3,000 mm (118 inches) in the Ghat Mountains but no more than 500 mm (19 inches) in their rainshadow. The far eastern part of the State receives in excess of 1,000 mm (39 inches) while most of the central areas of the State average 650 mm (25 inches) of rain. The low rainfall, accompanied by uneven distribution and high temperatures, results in very arid conditions throughout much of the State (see Annex 5, Map 2).

Failure of monsoon rains is the principal natural risk factor which could influence the success of this project. These rains fail one year out of four. Subnormal monsoon precipitation could result in plantation failures, particularly during the critical first two years after planting. Shortages of soil water can be mitigated by hand watering and by planting drought-resistant species.

c. Soils

Soils of Maharashtra are primarily deep black and medium black clay soils. The extreme eastern part of the State where the major forest areas are found has sandy and loamy soils. Other soils represented are coastal alluvium and lateritic soils in the Ghat Mountains (see Annex 5 Map No. 3). Most of the social forestry plantations will be located on the deep black and medium black clay soils generally found to be alkaline and low in humus, nitrogen and phosphorous. Such soils also tend to be poorly drained and vulnerable to waterlogging. These conditions dictate considerable care in the selection of tree species suitable to specific edaphic and climatic conditions. Leguminous tree and grass species will be established in order to improve soil fertility.

2. Plantation Site Selection

Plantations to be established under this project will be located on lands near the target villages. Available land, being unsuitable for agriculture, is generally of poor quality. Described variously as wastelands, marginal agricultural land or degraded forest land, these areas are characterized by shrubby vegetation with few trees and sparse grasses, stunted by overgrazing. Marginally better sites may be available along canals, roads and railways. These areas will be used for "strip" plantations to the extent that they are near villages. Household gardens and field bunds also offer relatively fertile sites. It is expected, however, that the majority of private planting will take place on scattered small plots of marginally productive agricultural land.

Allowing for such practical considerations as proximity to the village, villager preference, etc., the more productive sites will be selected for the village program. As a general rule not less than 5 hectares of the average 18.5 hectare village program will come from community lands. The balance will be from government and private lands.

3. Silvicultural Models and Prescriptions

Because of the new and evolving nature of social forestry, there is a paucity of reliable technical data for development of silvicultural models and prescriptions. The models discussed generally below are based primarily on Indian data, but also reflect experience from other parts of the world. The project design team tried to emphasize simplicity and reliability and to use conservative yield estimates. The models express the combined professional judgment of Indian and U.S. foresters involved in project development.

The variability in site quality, added to differences in climate and the preferences of villagers for different species and products, will require that a variety of silvicultural models be employed.

Ten models have been developed in collaboration with the H&SFD. Diversity in the models reflect the variability of site conditions, i.e. soil type and depth, water availability (irrigation and drainage) and the product mix desired. Species, nursery, spacing, and other silvicultural requirements will be specified for each model by the H&SFD, in site-specific prescriptions incorporated in the management plans. These prescriptions will reflect the product mix desired by the villagers within the production capability of the lands available. In general, about 90 percent of the trees planted will be firewood and fodder species. The remainder will yield other products, i.e. fruit, nuts and wood for housing construction and agricultural implements. Plants with medicinal and culinary uses will also be grown along with agave, a plant which may be employed as a natural fence and in addition produces sisal, a fiber used in cottage industry.

To ensure flexibility in meeting the various requirements of village programs, five models have been developed for block plantations. Different models have been formulated for rail, road and canalside (strip) plantations, and additional models have been proposed for the scattered plantings on private land as well as for soil and water conservation purposes.

The silvicultural models are designed to be labor intensive. The models, where possible, utilize species which can be coppiced or pollarded, thus reducing replanting requirements. Leguminous, nitrogen-fixing species are recommended to rehabilitate sites exhibiting low productivity. Irrigation is recommended only when water is readily available or during the first two years after planting. Fertilizer is recommended only in conjunction with irrigation because of the relatively high cost.

4. Plantation Protection

Plantations and other tree plantings require protection from man and his livestock as well as from natural pests, fire and drought. Both direct and indirect measures will be used to protect project plantings. Both temporary and permanent fencing, such as dry bramble barriers, live thorny hedges, and trenching, will be employed to inhibit the incursion of grazing animals. These physical barriers not only present an impediment to wandering livestock but also a readily recognizable legal boundary for herders. In addition, a watchman will be employed in each village to protect the block plantations against trespass and fire.

Land owners cooperating under the private forestry component will be expected to protect the trees distributed to them. They will be given extension training on methods of protection and will receive periodic visits from local village motivators and the Assistant Plantation Officer.

Insect and disease problems should be minimal in as much as recommended tree species are native or already well-adapted to conditions in Maharashtra. Treatment for termites will be made for certain species. Application of pesticides will be made only under the supervision of trained personnel, usually the Assistant Plantation Officer. The low quantities to be used and the treatment methods employed reduce the chances of significant environmental impact. If other treatments are necessary, several institutions such as the Forest Research Institute, Dehra Dun, could provide short-term consultants to devise and direct appropriate application of chemicals. Funds are provided in the project for such services.

5. Seed Processing and Storage

The requirements for seed, especially for those species favored in block plantations, will increase substantially over the life of the project. According to current practices, seed required for re-forestation programs is collected in surrounding natural stands and planted in nurseries to provide seedlings for the following year's plantations. Although this method reduces storage costs and losses in seed viability frequently associated with longer storage, it artificially limits a particular year's plantation by the success of the previous year's seed crop. Moreover, seeds collected from natural stands or by unskilled laborers are frequently of inferior quality, particularly during periods of seed scarcity or drought.

The current system of seed collection, processing and storage will not support the anticipated expansion of social forestry programs, especially as commercial production methods are adopted for seedlings supply. In recognition of the importance of improving seed supply capabilities, funds have been provided for services of a tree seed processing consultant to evaluate the needs for further assistance in this area. It is expected that such investigations and recommendations will be closely coordinated with similar work undertaken by the Madhya Pradesh Social Forestry Project.

D. Social Analysis

1. Introduction and Background

a. Introduction

The material presented below is intended to provide an understanding of the social context within which the project will be

implemented. This section deals with the issues of social feasibility, equity and the role of women. A more detailed examination can be found in the design team report on file with the Office of Agriculture and Rural Development at USAID/India.

b. Background

While it may be said that Maharashtra is one of India's most advanced states, this impression is largely attributable to the presence of Bombay and a handful of other large cities. Socio-economic indicators in Maharashtra's rural areas are significantly lower than those for urban areas and more comparable with national averages. For example, per capita income for rural areas was Rs.922 (\$102), only 18 percent higher than the all-India average of Rs.782 (\$87).^{6/} Other measures of relative prosperity, such as fertilizer consumption and the amount of gross cropped area, show Maharashtra to be below national averages. Land ownership patterns tend to follow national norms, with unequal distribution of land continuing despite Maharashtra's generally good record of achievements in land reform during the last two decades.^{7/} Nonetheless, the average size of holdings are decreasing and are indicative of the impact of land reform measures.

When expressed in terms of monthly per capita expenditure of Rs.15 (\$1.67) (the Indian definition of poverty), the incidence of poverty in Maharashtra's rural areas does not appear to differ substantially from India as a whole. For example, based on figures available through 1972-1973, the latest year for which analyzed data are available, some 57% of rural households were below the poverty line.

As in the rest of India, a large portion (72%) of the workforce is engaged in agriculture.^{8/} In addition, there has been an increased tendency recently for families even with some land to work as rural laborers. This trend may be indicative of a higher-than-average share of marginal land in Maharashtra than in other states and perhaps also of rural stagnation. Within this socio-economic context, the social forestry project offers promise of enhancing the productivity of marginal lands through revegetation as well as creating employment.

2. Social-Cultural Feasibility

There has been a general awakening among the rural population in recent years with respect to forests. This is particularly true of

^{6/} These figures are based on proxy indicators using agricultural and forestry data. Income data reflecting rural and urban distinctions are not available.

^{7/} By March 1981, 279,000 hectares had been declared surplus and 180,000 redistributed to 110,000 beneficiaries.

^{8/} Based on 1981 census.

women, the primary gatherers of fuelwood, who have been adversely affected by deforestation. One expression of this awakening is the "Chipko" movement in which women and children have successfully curtailed the exploitation of forested areas in the hill regions of Uttar Pradesh. Inspired by this popular movement, panchayats and other organizations such as rural women's clubs (Mahila Mandals) have become even more interested in forest preservation.

Although wide publicity has been given to the "Chipko" movement and there is a growing awareness of the need for preserving natural resources, project planners will need to be continually aware of one key issue that may affect project success, that is, the use of village common lands for establishing block plantations. Village common lands are employed for grazing livestock for the most part, and as indicated in the Social Soundness Analysis Report, ⁹are used mostly by small and marginal farmers. In Maharashtra, data show that the smallest farms tend to have seven times as many cattle per 100 hectares as do the largest ones and almost 15 times as many buffalo. Fodder requirements per unit land area are therefore much higher for small farmers than for larger ones. Furthermore, since smaller farmers will have less land on which to grow the needed amounts of fodder, they tend to be disproportionately frequent users of common lands. These individuals will therefore perceive themselves to be deprived more, at least in the short run, by social forestry plantations on common lands than will large farmers. In the long run, the small farmers stand to benefit from block plantations, as more fodder and fuel will be available for livestock and cooking respectively. Moreover, a greater proportion of the manure produced could be used for fertilizer rather than for cooking as is often the case now. Special care, therefore, will be needed to insure that traditional patterns of livestock grazing are not unduly disrupted in order to gain the support of the small farmer groups for community forestry activities. The variety of grass and fodder tree species proposed in the various plantation models will go a long way to addressing this issue.

3. Benefits and their Distribution

a. Plantation Produce

The H&SFD has already given substantial thought to criteria for the distribution of plantation produce. A rough framework has been developed which includes a standard set of needs for each household, to be prepared by the Maharashtra Directorate of Economics and Statistics. This standard set will help determine the order of magnitude of needs for each village and the amount of produce to go to each beneficiary family. The specific approach for the distribution of produce has not been

⁹ On file with the Office of Agriculture and Rural Development, USAID/India.

finalized. The anticipated distribution methods will include direct sale, auction, payment in kind and, where appropriate, distribution through the government nistar system.

In the distribution of produce, priority will be given to landless laborers, small and marginal farmers, and other impoverished groups prior to distribution to the general public.

b. Employment

There will be 30 million workdays of employment generated in the project through activities related to ground preparation, planting, weeding, etc. landless laborers and small farmers seeking additional employment will be the prime beneficiaries. Minimum wages will be paid according to prescribed practice. Approximately 60 percent of nursery production costs and 85 percent of plantation costs will be for labor. Labor required for these activities can be expected to come from the lower income strata. The key silvicultural planting time is June-July. No other major crops are planted in significant quantities during this period in Maharashtra, so labor availability is not expected to be a problem. Labor for plantation development will also be generated through the Employment Guarantee Scheme (EGS), a unique Maharashtra rural development program that creates durable assets in rural areas using unemployed labor.

c. Other benefits

Owners of marginal land stand to benefit to the extent that they will be able to maximize the productivity of their resource at least as far as fuelwood and fodder are concerned. This situation, however, will probably depend to a great deal on the effectiveness of the forestry extension organization in reaching small and marginal farmers. The savings in time gained from the availability of an increased supply of fuel and fodder in villages will vary from village to village. Other project benefits are expected to come from the services of the forestry extension organization in the dissemination of information and the transfer of basic technology to individual villagers and panchayats. The Social Soundness Analysis identified a potential problem of a large farmer bias of the private forestry component based on the experience in Gujarat. Similar experience has been reported for Indian extension systems in general.

This issue was discussed at length during project design. It is recognized that while all farmers will receive an equal amount of seedlings free of cost (up to 350 per family), not all farmers may receive an equal share of the extension worker's time. There are no easy means by which assurances can be provided that the forestry extension worker will visit as many small and marginal farmers as possible. This aspect of project implementation will be continually reviewed by Maharashtra project officials and AID in order to devise effective ways to ensure equity in the provision of services.

4. Role of Women

The design team report discusses a number of methods for usefully involving women in project activities. Commonly employed in nursery operations, women are increasingly found working in site preparation and planting operations as well. Many such jobs of this type will be created by the project. With the experience and training gained through the program, women will also move from day-laborer positions into supervisory roles in nursery and plantation operations. Plantation weeding and pruning operations, which correspond to women's traditional roles as collectors of fodder and firewood, should provide additional employment opportunities for women. The design team recommended and AID concurs that women be selected for positions of motivator and extension agent. Given the cultural traditions and customs in some areas that bar women from contact with men outside the family group, female villagers may be preferred for these positions when the target group is rural women, the primary gatherers of firewood and fodder.

E. Environmental Assessment

As a result of the Initial Environmental Examination (IEE) a negative determination was recommended by USAID/India and subsequently approved by the AA/ASIA (see Annex 7). As can readily be seen from the description of the various project facets, the project activities are designed to identify and correct existing environmental degradation and contribute to the long-run improvement and rationalization of land use for the areas involved. ^{10/}

V. Cost Estimates and Financial Plan; Disbursement Procedures

A. Summary Cost Estimates and Financial Plan

1. Cost Estimates

Total project costs are estimated at \$60 million over an eight year period. New cost estimates developed by the design team in cooperation with the H&SFD staff include variable inflation factors for different items based upon experience over the past several years. These figures differ significantly from those provided in the original proposal prepared by the GOM in 1980. To retain the plantation targets and project framework originally approved by the GOI Planning Commission and the GOM, to enhance the institution building and technology transfer components and to cover inflation, it was necessary to increase total project funding from the 50 million dollars originally proposed to 60 million dollars. This additional funding was found necessary despite a streamlining of

^{10/} Note that over the course of project development the project as now conceived has institutional building as its principal purpose. While this differs with the purpose as stated in the IEE, because project activities remain unchanged, the conclusions of the IEE remain valid.

staffing undertaken by the H&SFD that achieved a 25 percent reduction in positions. AID assistance has been increased from 25 to 30 million dollars, 25 million loan and 5 million grant. The GOM will match the additional 5 million in AID monies with funds previously budgeted in Maharashtra's Sixth Five Year Plan and channeled for the H&SFD under the Employment Guarantee Scheme for social forestry. These monies, while in addition to those originally approved by the GOM and GOI Planning Commission for the project, do not require reallocation since they were to be administered by the H&SFD and used for social forestry. The GOM through the Finance Department and the GOI through the Office of the Inspector General of Forestry have been apprised of these changes.

As the tables on the following pages indicate, total project costs will still be shared on an equal basis. In attaining this goal, the GOM's and AID's portion of financing will differ for selected line items. For example, AID grant funds will finance 100% of the costs related to the provision of technical assistance and for training overseas as well as within India. Costs related to the construction of housing and offices as well as the purchase of Indian vehicles will be fully covered by the GOM.

2. Loan and Grant Financing

The loan portion of \$25 million will finance roughly half of the costs of plantation establishment, H&SFD staff costs and operating costs.

The \$5 million grant will be used to support U.S. and Indian technical specialists for the IT Unit, both overseas and in-country training, and project evaluation (see Annex 6 for more detail on plantation, IT Unit, training and research expenditures).

B. Disbursement Procedures

AID and the H&SFD have agreed to use Fixed Amount Reimbursement (FAR) procedures to finance the establishment of 4,300 village plantations. All direct and indirect costs, including staff costs of H&SFD, will be divided equally among the plantations to be established. These costs total Rs.508 million, the equivalent of \$54,050,000. This works out to Rs.117,608 or \$12,512 per plantation. The AID contribution to this sum, \$25 million in loan funds, yields a fixed amount to be reimbursed each plantation of \$5,800 (Rs.54,500).

This sum will be reimbursed in three installments, or at three "trigger points", during the establishment and development of each plantation. The first will be the acceptance by the H&SFD, village panchayat and the participating private individuals of the management plan

ILLUSTRATIVE COST ESTIMATES AND FINANCIAL PLAN
(\$000; \$1.00 = Rs.9.40)

PROJECT ELEMENT	AID LOAN			GOI/GOM	TOTAL
	LC	FX	TOTAL		
Plantations: Direct Costs	14,190	-	14,190	13,230	27,420
Plantations: Indirect	10,810	-	10,810	15,820	26,630
H&SFD Staff	(7,876)	-	(7,876)	(7,344)	(15,220)
Operating Costs	(2,934)	-	(2,934)	(2,736)	(5,670)
Equipment, Buildings, etc.	-	-	-	(5,740)	(5,740)
SUB-TOTAL PLANTATIONS	25,000	-	25,000	29,050	54,050
	AID GRANT				
	LC	FX	TOTAL		
IT Unit	904	2,146	3,050	-	3,050
Training	540	1,120	1,660	-	1,660
Overseas	-	(1,120)	(1,120)	-	(1,120)
In-country	(540)	-	(540)	-	(540)
Research	190	50	240	950	1,190
Evaluation	-	50	50	-	50
SUB-TOTAL	1,634	3,366	5,000	950	5,950
GRAND TOTAL	26,634	3,366	30,000	30,000	60,000

ESTIMATED
PROJECT EXPENDITURES BY FISCAL YEAR

(\$000)

USFY	A. I. D.			GOJ/GOM	TOTAL
	Loan	Grant	Total		
1983	1,890	625	2,515	2,270	4,785
1984	2,962	911	3,873	3,550	7,423
1985	3,580	987	4,567	4,300	8,867
1986	5,360	835	6,195	6,400	12,595
1987	5,704	464	6,168	6,980	13,148
1988	2,204	388	2,592	2,600	5,192
1989	2,160	362	2,522	2,600	5,122
1990	1,080	428	1,508	1,300	2,808
T O T A L	25,000	5,000	30,000	30,000	60,000
<u>I F Y</u>					
10/82-03/83	864	222	1,135	1,040	2,126
1983-84	2,306	822	3,196	2,800	5,928
1984-85	2,962	1,002	4,034	3,500	7,464
1985-86	4,028	974	5,002	4,800	9,802
1986-87	5,360	593	5,953	6,560	12,513
1987-88	3,976	433	4,409	4,800	9,209
1988-89	2,204	345	2,549	2,600	5,149
1989-90	2,160	380	2,540	2,600	5,140
04/90-09/90	1,080	229	1,309	1,300	2,609
T O T A L	25,000	5,000	30,000	30,000	60,000

Note: Columns may not add due to rounding.

for the village program. ^{11/} For each plan approved, \$3,200 will be reimbursed. This sum, representing 55 percent of the total amount to be reimbursed per village program, reflects the importance placed upon the preparation of carefully developed and fully agreed plans. It also reflects the difficulty AID anticipates in achieving real communication and collaboration between the H&SFD and villagers, at least during the initial stages of the project. Consideration had been given to reducing this instalment in order to place more emphasis on the later trigger points, when village programs would be functioning and thus project outputs achieved. However, \$3,200 does represent the full proportion of direct and indirect costs incurred by the H&SFD in developing and reaching agreement on 270 management plans during the balance of IFY 1982-83. Furthermore, because of the importance of preparing the management plans carefully and with full village collaboration, AID and the H&SFD have agreed to set this instalment at \$3,200.

The second trigger point will be completion of all site preparation work and the initial planting of the village block plantation. This will trigger a reimbursement of \$600.

The third and final trigger point will be submission of a "survival report", roughly two years after planting. The survival report is a comprehensive evaluation of the progress of the plantation, including the number of seedlings which have survived the critical first two years. Although this report will probably focus on silvicultural and natural phenomena, nevertheless it will be an overall indicator of the success of the village program. If, for example, the panchayat fails to provide maintenance or guard service for the block plantation, it will almost inevitably be overrun with weeds or subjected to uncontrolled grazing, resulting in very low survival rates. Each survival report indicating that an acceptable stocking level has been achieved will trigger a final reimbursement of \$2,000, for a grand total per plantation of \$5,800. Guidelines for reimbursement based on survival rates of 50-60% and nominal stocking levels of 80% at the end of two years for individual plantations are given in Annex 12. ^{12/}

This difference between the total cost of \$12,512 per plantation and the \$5,800 to be reimbursed by AID represents the contribution of the host country to this project (see table on page 38 for breakdown of these costs, and Annex 6 Table 1 for projection of expenditures for plantations on the basis of achievement of trigger points).

^{11/} Participating private individuals will be concerned only insofar as their own lands are involved in the program.

^{12/} Survival rates are the percentage of seedlings that remain viable or survive based on the number of seedlings planted. Stocking levels are the percentage of trees that are viable compared with the number of seedlings specified in the silvicultural prescription.

We believe adoption of FAR procedures for this project has several advantages over the direct financing used on the Madhya Pradesh Social Forestry Project and on most previous AID projects in India. The principal advantage is that both AID and the H&SFD focus on achievement of the trigger points. These trigger points, when attained, denote achievement of the project's outputs, i.e. establishment of functioning plantation programs at the village level. Including such indirect costs as H&SFD staff costs gets AID out of the business of directly supporting and monitoring salary costs, and emphasizes that these costs should properly be attributed to the H&SFD's principal function, the establishment of village programs. AID project monitoring will thus concentrate on verification that the trigger points have in fact been achieved.

The fixed amount of \$5,800 has been agreed upon for each village program regardless of size. The development of a highly motivated and technically competent forest resources management group at the panchayat level rather than number of hectares treated or number of stems planted is recognized to be the objective of the H&SFD program. A flourishing, well-tended plantation roughly three years after the introduction of the social forestry program, or two years after planting, will evidence success of H&SFD efforts and the promise of increased production of fuel, fodder and other forest products.^{13/}

Documentation which will trigger these FAR payments will include notification of the number of management plans approved and the name and location of the village involved with each such plan. Such a report will be prepared by the Plantation Officer for all villages under his jurisdiction. This officer will also report quarterly on plantation operations and prepare survival reports which will be compiled at the district level, summarized and forwarded to H&SFD headquarters in Bombay. Thus, the H&SFD will have a reporting system which will clearly show the achievement of each trigger point, by village. This will facilitate monitoring by the IT Unit as well as by AID staff. Villages will be visited at random to determine the accuracy of the reported achievements.

Research, training and technical assistance, all to be funded under the grant component of the project, will as in the past be directly financed by AID.

^{13/}The average village program will include 18.5 hectares.

VI. Implementation Plan

A. Implementation Strategy

The extension program will be implemented in each of Maharashtra's 27 districts in the first year of field operations (the second year of project implementation). On a district level, the number of villages to be contacted by extension workers and the total number of hectares to be planted will gradually increase over a five-year period. This phasing will facilitate training activities and permit the H&SFD more time to establish support programs such as monitoring and evaluation. The phasing of planting activities is shown below:

NUMBER OF VILLAGES
ENTERING EXTENSION PROGRAM
ANNUALLY

	Y E A R					Total
	1	2	3	4	5	
Villages	540	800	800	1080	1080	4300
% of Total	12.5	18.6	18.6	25.1	25.1	100

NUMBER OF HECTARES PLANTED ANNUALLY
(ESTIMATED)

Type of Plantation	Y E A R						Total	Total %
	1	2	3	4	5	6		
Block	2,355	5,730	6,950	8,400	9,800	4,765	38,000	47.2
Private	2,355	5,730	6,950	8,400	9,800	4,765	38,000	47.1
Watershed	40	90	110	100	140	70	600	0.7
Strip	200	500	590	700	1,000	400	3,200	4
Tribal	50	350	400	0	0	0	800	1
TOTAL	5,000	12,400	15,000	17,600	21,000	10,000	81,000	100.0
% of Total	6	15	19	22	26	12	100	

Numbers may not add due to rounding.

Each of Maharashtra's 27 districts will have an average of ten Plantation Officers (PO's) responsible for working directly with villagers. Each PO will be assigned two villages the first year, for a total of roughly 540 villages. This number will grow gradually until each PO has 16 villages by the end of the project for a total of approximately 4,300.

The GOM has several reasons for adopting a district-based strategy, the principal one being the pervasive nature of deforestation in Maharashtra. By launching an extension program in each district, deforestation can be addressed on as wide a geographic and population base as institutional resources will permit. The program will begin with a few villages in each district and gradually expand as experience is gained. Those villages that are the least well-off in terms of agreed socio-economic criteria and firewood deficit will be given priority. AID considers the strategy to be sound and the phasing feasible in light of projected staff requirements, responsibilities and training needs.

B. Role of Institutional Contract - the IT Unit

The Information and Technology (IT) Unit will assist AID in managing and administering the project. It will be funded with grant funds through a direct AID contract. During project preparation alternative modes of contracting were discussed with AID contracting specialists and with the GOM. It was jointly concluded that a direct AID contract is appropriate. A contract with a U.S. educational institution or consortium of such institutions with strong background and experience in forestry and community development is recommended.

The IT Unit will be located in New Delhi. In addition to two U.S. resident specialists, it will be staffed with three Indian professionals.

Both U.S. contractors are expected to be foresters with overseas experience. One individual will have a background in research and administration while the other will be a specialist in training, extension and community mobilization. The three Indian staff will be (1) a forester with expertise in nursery and plantation establishment, (2) an information specialist, and (3) a rural community development specialist, the latter two preferably with experience in forestry. Although located in New Delhi, these individuals will be expected to spend much of their time in Maharashtra and Madhya Pradesh in support of the social forestry projects in each state.

The professional staff will be supported by two secretaries and a driver (see Annex 6 Table 3 for details). The Unit's primary responsibility will be day-to-day collaboration with the H&SFD and the Forestry Department in New Delhi in development of training and research plans and in facilitating their implementation. It will also prepare

monitoring plans and oversee the evaluation program, including the provision of assistance for conducting base-line surveys and impact evaluations. Periodic reports, the frequency and contents of which will be determined in conjunction with the contractor, will also be required. In carrying out these responsibilities, the IT Unit will be expected to prepare for AID review and approval annual work plans and schedules. Each of these requirements will be reflected in the scope of work for the contract.

C. Interim Arrangements

Approximately eight months to a year will elapse before resident contract personnel will arrive in India. Prior to that time, most of the H&SFD staff will have been in place at all levels of the organization. Planning for the planting season will begin late summer (August/September) when outside assistance may be effectively used. Short-term personnel will be obtained for specific needs as an interim measure until the long-term personnel of the IT Unit are in place.

D. Preliminary Schedule

1. Overall Project

<u>Activity</u>	<u>Action Agent</u>	<u>Estimated Completion Date</u>
Agreement Signed	USAID/GOI	09/30/82
Project Implementation Letter No. 1	USAID/GOI	10/30/82
Short-term Consultants: - Research - Training	USAID "	10/82 "
Conditions Precedent Met	USAID/GOI	12/31/82
Training Plan Prepared	H&SFD/Contractor	12/82
Research Plan Prepared	H&SFD/Contractor	12/82
Long-term Contractor Staff Arrives	USAID/Contractor	04/83
IT Unit Staffed and Fully Operational	Contractor	10/83

<u>Activity</u>	<u>Action Agent</u>	<u>Estimated Completion Date</u>
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District Nurseries Establishment:

27	H&SFD	06/30/82
27	H&SFD	06/30/84

Management Plans for Village Programs Approved:

540	H&SFD	09/30/83
800	H&SFD	84
800	H&SFD	85
1080	H&SFD	86
1080	H&SFD	87

Village Plantations Planted:

270	H&SFD & Villages	June-July 83
670	"	84
800	"	85
940	"	86
1080	"	87
540	"	88

Survival Reports Received:

270	H&SFD	Aug.-Sep. 85
670	H&SFD	86
800	H&SFD	87
940	H&SFD	88
1080	H&SFD	89
540	H&SFD	90

Project Reviews:

First	H&SFD/Contractor	12/83
Second	"	12/84

In-Depth

Third	GOI/GOM/USAID	12/85
Fourth	H&SFD/Contractor	12/86
Fifth	"	12/87
Sixth	"	12/88
Seventh	"	12/89

End of Project Evaluation	GOI/GOM/USAID	06-09/90
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2. Illustrative Village Program

The following sample village program calendar should illustrate how the project will progress at the village level, and how the training to be undertaken with project funding will fit into the planting cycle.

September,	1982:	GOI and AID sign project agreement.
November,	1982:	H&SFD APO visits village, begins discussions with panchayat on management plan.
February,	1983:	H&SFD and panchayat agree on management plan, hectarage to be planted, mix of species, etc. H&SFD relays need for seedlings to district nursery, and reports to AID that agreement on management plan achieved.
February-March,	1983:	APO undergoes initial short-term in-service training.
April-May,	1983:	Villagers complete all site preparations during hot weather fallow season, when demand for labor for agriculture is slack.
June-July,	1983:	All plantings on government, community and private lands completed.
July-August,	1983:	Critical period for tending of new seedlings: watering, weeding, guarding against unauthorized grazing, replacing casualties. H&SFD staff visits to village at least once a month to assure that plantations are being properly cared for.
August,	1983:	H&SFD APO responsible for this village reports to headquarters that planting is complete; H&SFD relays information to AID for reimbursement.
Winter-Spring	1984:	Weeding.
June-July,	1984:	Replacement of casualties.
Sep.-December	1985:	APO visits village, prepares survival report; assesses any damage and its causes, advises village on corrective action required, submits survival report to headquarters. H&SFD relays information to AID for reimbursement.

VII. Monitoring and Evaluation

A. Monitoring

1. Potential Problems

The list below is intended to illustrate the types of problems that may arise during implementation.

a. The effectiveness of H&SFD may be less than optimal for one or more of the following reasons:

- insufficient number of qualified personnel
- difficulties in developing effective management plans
- difficulties in establishing rapport with client villagers

b. Ownership disputes may arise over land to be used for plantations.

c. Competing uses for land, e.g. for common grazing, may hamper plantation program.

d. Seedlings, other inputs and technical collaboration may not be available when and where needed.

e. Research program may be delayed.

f. Training program may be delayed.

2. Monitoring Visits and Reporting

Keeping track of these potential problems as project implementation progresses will require field visits to review H&SFD operations, both in Bombay and at field locations, and the operation of district nurseries, research and training facilities and, most importantly, village plantations. The IT Unit will bear a major portion of project monitoring responsibility. It will be expected to prepare monitoring plans outlining the project operations to be monitored, items to look for and the frequency of the visits. Flexibility will have to be maintained regarding frequency in order to respond to actual problems as they arise. We will expect the IT Unit to be in more or less constant contact with H&SFD, and thus to be able to assess continually its staffing operations, strengths and weaknesses.

The project's broad geographic scope and village orientation plus the diverse and scattered nature of the plantations involved render the task of monitoring immense. It is recognized that the monitoring staff will be able to assess personally only a limited number of the village programs actually initiated. Random sampling will be employed in the survey selection process.

At least half of the 54 district nurseries to be established by June 1983 should be visited at least once during the first year, as should all research and training facilities. 540 village plantations will be established the first year. Five percent coverage of these villages will require visits to approximately 30 during the first year. Because the initial year or two will be critical to the success of the whole program, we will expect as large a sample as possible to be visited the first year in order to determine what problems arise and what corrective action will be necessary as the program expands. Approximately 50 villages will be visited each year after the IT Unit is fully staffed and operational.

Reports of all such visits and of overall project progress will be prepared by the IT Unit and forwarded to AID, the GOM, and the GOI. AID personnel will also conduct field visits, monitoring both the accuracy and effectiveness of the IT Unit's monitoring, as well as conducting independent visits. AID staff will make between six and twelve monitoring visits per year, including approximately two to Bombay with the balance being to district and village operations.

3. AID Staffing Implications

A U.S. project officer, and a senior FSN (Indian) forester will comprise the project management team in the Mission. Between 30 and 40% of each individual's time will be spent in the field, with the balance spent in New Delhi dealing with the GOI and with the IT Unit.

B. Evaluation

1. Regular Reviews

Together with the GOI and the H&SFD, AID will conduct periodic reviews at regular intervals of not more than one year to determine the progress of the program in meeting output targets. Specific items to be considered in such assessments will be the number of hectares treated, the species mix planted, number of nurseries established, the number of management plans accepted and research projects completed. The findings of the monitoring reports will be consolidated in the preparation of the annual progress report.

2. In-depth Evaluation

In-depth evaluation are scheduled at the end of the third year of the project and at the conclusion of the project in the eighth year. A cooperative effort of GOI, GOM and AID, these intensive reviews will assess the overall success of the project in achieving its institution-building objectives and the contribution of the project to meeting its various goals, specifically, enhancing the local availability of forest products, decreasing the rate of deforestation and generating rural employment.

A critical question will be as to the success of the H&SFD extension program and mobilization of village participation in communal forest land management.

Since ultimate success of the project depends on motivating villagers to self-help, evidence indicating that they are more than passive recipients in the current program will be important. Evaluation criteria for such a determination might include:

- a) the number of villages expanding their initial project size per year;
- b) the number of panchayats assuming full responsibility for village plantations under conditions of the agreement;
- c) demand for seedlings to be planted on private land;
- d) number of requests for participation in the program by panchayats; and
- e) numbers of villagers assisting in and contributing to development of management plans.

Similarly, the question of equitable distribution of project benefits among villagers will be important. Examples of evaluation criteria might be:

- a) the type and quantity of benefits actually delivered to villagers in various economic strata in comparison to the delivery of benefits specified in the H&SFD panchayat agreement;
- b) the number and substance of complaints regarding distribution of forest products received by the H&SFD; and
- c) the types and quantities of forest products from communal plantations sold outside the village.

Comparative data will have been collected in the base-line studies conducted during the preparation of the management plans. Additional information useful in in-depth evaluations will be developed by the IT Unit and various specially focused investigations conducted under the research program.

VIII. Conditions and Covenants

A. Conditions Precedent to Disbursement:

1. Prior to any disbursement of Loan funds under the project, or to the issuance of documentation pursuant to which such disbursement shall be made, the Cooperating Country shall furnish to AID, in form and substance satisfactory to AID, a standard format and written guidelines and procedures for the management plan.

2. Prior to any disbursement of Grant funds under the project for research activities, other than for a marketing study of forestry projects for off-farm use, or to the issuance of documentation pursuant to which such disbursement shall be made, the Cooperating Country shall furnish to AID, in form and substance satisfactory to AID, a detailed plan for the research program to be conducted under the project.

3. Prior to any disbursement of Grant funds under the project for training activities, or to the issuance of documentation pursuant to which such disbursement shall be made, the Cooperating Country shall furnish to AID, in form and substance satisfactory to AID, a schedule for all training activities under the Grant.

B. Covenants

1. Staffing and budgets will be provided for the H&SFD sufficient to carry out the objectives of the project and to build and maintain an institution capable of sustaining the expansion of social forestry throughout Maharashtra.

2. Professional forestry and other staff, as appropriate, assigned to the H&SFD may receive training under the project provided their services are retained for the H&SFD in accordance with applicable Government of India rules governing period of bond following training.

3. Documentation provided to AID confirming that a methodology has been established for determining household consumption estimates being prepared for this project.

4. Documentation provided to AID confirming that criteria have been established for the distribution of forest produce.

5. Documentation provided to AID confirming that criteria have been established for the selection of villages to participate in the project.

6. Establishment of an evaluation program as an integral part of the project, which includes the establishment of an adequately-staffed monitoring and evaluation unit within the H&SFD by June 1983. The program will include, during the implementation of the project and at one point thereafter: (1) evaluation of progress toward attainment of the objectives of the project; (2) identification and evaluation of the problem areas or constraints which may inhibit such attainment; (3) assessment of how such information may be used to help overcome such problems; and (4) evaluation to the degree feasible, of overall development impact of the project.

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UNCLAS STATE 163417

ADM AID

E.O. 12065: N/A

TAGS:

SUBJECT: APAC - MAHARASHTRA SOCIAL FORESTRY (386-0478)

REF: STATE 140847

1. APAC APPROVED PID JUNE 20, 1980. APAC GUIDANCE REFTEL CONCERNING MADHYA PRADESH SOCIAL FORESTRY PID ALSO APPLIES TO THIS PROJECT. THE APAC WAS PARTICULARLY AWARE THAT DEVELOPMENT OF THIS PROJECT WOULD TAKE PLACE SUBSTANTIALLY WITHOUT BENEFIT OF AN IMPLEMENTATION RECORD FOR THE MADHYA PRADESH PROJECT. THIS WOULD MEAN THAT AT SOME POINT IN FY 82 SOME DOLS.50 MILLION IN AID RESOURCES WOULD BE COMMITTED TO WHAT IS ESSENTIALLY AN UNTRIED MAJOR PROJECT FIELD FOR AID IN INDIA. THE APAC EMPHASIZED THEREFORE THAT DEVELOPMENT OF BOTH PROJECTS WOULD REQUIRE A MAJOR EFFORT TO ENSURE THAT THE PRINCIPAL SOCIAL, PARTICIPATION, AND ECONOMIC QUESTIONS WERE ADEQUATELY ADDRESSED.

2. IN ADDITION TO THE ISSUES REFTEL AND THOSE SET FORTH IN SUBJECT PID ITSELF (WITH ADDITIONAL COMMENT BELOW), THE APA REVIEW FOCUSED ON THE QUESTIONS SET FORTH IN THE FOLLOWING PARAGRAPHS:

3. MISSION STAFFING: THE APAC WAS CONCERNED ABOUT MISSION CAPACITY TO UNDERTAKE DEVELOPMENT OF THESE TWO PROJECTS, AND ALSO CONCERNED ABOUT ADEQUATE ASIA BUREAU BACKSTOPPING. PREVIOUS DISCUSSIONS WITH MISSION STAFF ATTENDING THE PROJECT COMMITTEE MEETING HAD ESTABLISHED THE NEED FOR A LONG-TERM EXPERT IN THE MISSION. THE APAC STRONGLY CONCURRED IN THIS CONCLUSION AND RECOMMENDED THAT SUCH A PERSON BE RECRUITED FOR ARRIVAL ASAP (INCLUDING PARTICIPATION IN THE MADHYA PRADESH PROJECT DESIGN TEAM). AT THE SAME TIME STRENGTHENING ASIA BUREAU CAPACITY TO BACKSTOP SOCIAL FORESTRY INITIATIVES WILL BE A PRIORITY FOR THE ASIA BUREAU.

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4. THE ISSUE ADDRESSED PARAS. 2 AND 3 REFTEL WAS DISCUSSED AT LENGTH. THE DISCUSSION FOCUSED PRINCIPALLY UPON THE QUESTION OF FEASIBILITY IN TERMS OF THE REQUIREMENT FOR CHANGING INDIVIDUAL AND GROUP BEHAVIOR IF THE PROJECT OBJECTIVES WERE TO BE ACHIEVED. THE APAC EMPHASIZED THEREFORE THAT THE DESIGN TEAM'S ATTENTION SHOULD BE DIRECTED TO DEVELOPMENT OF AN EXPLICIT STRATEGY FOR BRINGING ABOUT SUCH CHANGE IN BEHAVIOUR. THE APAC WAS PARTICULARLY CONCERNED THAT THE PROJECT NOT CLAIM TO BE ABLE TO ACCOMPLISH MORE THAN IS SENSIBLY POSSIBLE ON THIS POINT, WHILE AT THE SAME TIME THE APAC RECOGNIZED AND CONFIRMED THAT THE DEVELOPMENT OF A STRATEGY THAT BASICALLY SUCCEEDS, AT LEAST IN LOP TERMS, MUST BE A MAIN EFFORT OF THE DESIGN TEAM. AS PART OF THIS EFFORT, THE TEAM NEEDS TO MAKE CLEAR THE EXTENT TO WHICH THE PROJECT COULD STILL BE SUPPORTED IF ACHIEVEMENT OF THE SOCIAL OBJECTIVES WERE LIMITED.

5. FUNDING LEVEL: THE PROPOSED FUNDING LEVEL WAS APPROVED AS A BASIS FOR PROJECT DESIGN BUT THE APAC SPECIFICALLY NOTED (AS POINTED OUT IN PARA. 1 ABOVE) THAT COMBINED TOTAL FUNDING COMMITMENT OF THIS PROJECT TOGETHER WITH THE MAHARASHTRA PROJECT MAY BE GREATER THAN PROJECT EXPERIENCE WOULD WARRANT IN FY 1982. WHETHER THIS WOULD REQUIRE A MORE GRADUAL APPROACH IN THIS PROJECT, SUGGESTING PHASING OF ACTIVITIES AND LOWER INITIAL FUNDING LEVELS, WILL NEED TO BE ADDRESSED IN THE PP. ON THE SAME POINT THE APAC STRONGLY DISCOURAGED ANY SUGGESTION OF A HIGHER SHARE OF AID PROJECT FINANCING REF. PARA. III-D OF THE PID). IN ADDITION, IN VIEW OF THE RELEVANT SCARCITY OF GRANT FUNDS AND THE RELATIVELY LARGE TOTAL LEVEL OF FUNDING PROPOSED FOR THIS AND THE MADHYA PRADESH PROJECT, THE APAC SUGGESTED THAT THE MISSION REEXAMINE THE PROPOSAL FOR USE OF DOLS. ONE MILLION IN GRANT FUNDS FOR THIS PROJECT. THE MISSION WAS ASKED IN THE ALTERNATIVE TO EXPLORE A BUDGETARY BREAKDOWN WITH THE GOI WHICH WOULD APPLY LOAN FUNDS TO THE EXTENT GOI FUNDS WERE NOT ADEQUATE OR AVAILABLE. THE APPLICATION TO THE USE OF BOTH THIS PROJECT AND MADHYA PRADESH OF THE DOLS. ONE MILLION FROM THE MADHYA PRADESH PROJECT WAS SUGGESTED, SUPPLEMENTED IN BOTH CASES WITH LOAN FUNDS OR GOI BUDGET. CHRISTOPHER
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UNCLAS STATE 140847

AIDAC

E.O. 12065: N/A

TAGS:

SUBJECT: APAC: MADHYA PRADESH SOCIAL FORESTRY PID (386-0475)

REFS: (A) STATE 126624, (B) NEW DELHI 9498, (C) STATE 122285

1. APAC APPROVED PID ON MAY 13, 1980. REF C, EXCEPT AS QUALIFIED IN THIS CABLE, SHOULD BE APPLIED AS GUIDANCE IN PROJECT PREPARATION. APAC DECISIONS AND RECOMMENDATIONS FOLLOW.

2. WHILE SUBSTANTIVE QTE FORESTRY UNQTE PROBLEMS MUST BE EFFECTIVELY ADDRESSED, WE BELIEVE KEY ELEMENT FOR PROJECT SUCCESS IS DEVELOPMENT OF A WORKABLE QTE SOCIAL UNQTE COMPONENT. INTEGRATION OF BIOLOGICAL, ECONOMIC AND CULTURAL COMPONENTS MUST BE ACHIEVED IN PROJECT DESIGN IF A VIABLE SOCIAL FORESTRY SYSTEM IS TO CONTINUE AFTER PROJECT COMPLETION.

3. PARTICIPATION: MOTIVATION AND PARTICIPATION OF VILLAGERS AND GOVERNMENT OFFICIALS NEEDS FURTHER DESCRIPTION. ALTERNATIVE MODELS FOR MOTIVATING AND ENCOURAGING VILLAGER PARTICIPATION BOTH FROM NATURAL AND ECONOMIC VIEW POINTS SHOULD BE DEVELOPED AND THE MODEL TO BE RECOMMENDED DEFINED IN DETAIL. PARTICIPATION SHOULD MEAN THAT VILLAGERS HAVE CONTROL OVER THE USES OF THEIR LANDS AND THAT BEHAVIORAL CHANGE IS THE GOAL. PARTICIPATION GENERALLY IS TO BE MAXIMIZED AND COST PER HECTARE MINIMIZED, RECOGNIZING THE DISTINCTION BETWEEN COMMERCIAL TREE FARMING AND SOCIAL FORESTRY AROUND VILLAGES. IT WAS POINTED OUT THAT, TRADITIONALLY, TREES GROWN IN GOVERNMENTAL NURSERIES ARE QUITE COSTLY, A CONSEQUENCE OF INFRASTRUCTURE OVERHEAD AND INEFFICIENT NURSERY PRACTICES. THIS RESULTS IN INCREASED AFFORESTATION PROJECT COSTS. HOWEVER, THESE COSTS CAN BE GREATLY DECREASED BY TRAINING STUDENTS AND VILLAGERS IN APPROPRIATE TECHNOLOGY AND PROVIDING ADEQUATE RESOURCES TO GROW SEEDLINGS IN THEIR BACKYARDS AND AT SCHOOLS.

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4. RURAL ECONOMY: GIVEN TRADE-OFFS IN VILLAGE ECONOMIES TO BE AFFECTED BY THE PROJECT AND THE FEEDGRAIN DEFICIT IN MADHYA PRADESH, THIS CAN BE VIEWED AS MUCH AS A LIVESTOCK AND GRAZING PROJECT AS A FORESTRY ONE. CONCERN WAS EXPRESSED REGARDING CHANGES IN TRADITIONAL ECONOMIC PATTERNS THAT APPEAR NECESSARY TO THE PROJECT'S SUCCESS. FOR EXAMPLE, REFORESTATION IS TO TAKE PLACE ON LANDS TRADITIONALLY USED FOR GRAZING. WHERE IS THE LIVESTOCK THEN TO BE GRAZED? CONSULTANT ASSISTANCE FOR PROJECT DESIGN MIGHT BE DIRECTED TO ADDRESS THESE MICRO-ECONOMIC ISSUES.

5. MADHYA PRADESH ECONOMY: APPROPRIATE ALLOCATION OF PROJECT RESOURCES BETWEEN SOCIAL FORESTRY AS FULFILLING VILLAGE NEEDS, AND COMMERCIAL FORESTRY, NEEDS CLARIFICATION. WE UNDERSTAND THAT THE MADHYA PRADESH GOVERNMENT SUBSIDIZES URBAN FIREWOOD CONSUMPTION THROUGH THE PURCHASE OF FIREWOOD FROM RURAL AREAS FOR DELIVERY TO URBAN AREAS. THIS PRACTICE AS WELL AS THE OVERALL FUEL AND FOOD ECONOMY OF THE STATE SHOULD BE ANALYZED.

6. SEPTEL INDICATES ADDITIONAL INFORMATION REQUIRED FOR RECOMMENDATION OF NEGATIVE IEE DETERMINATION.

7. EXPECT TO DISCUSS PROJECT DESIGN NEEDS AND ANY OUTSTANDING ISSUES WITH BLOOM DURING HIS TDY IN AID/W. NUSKIE

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Best Available Document

MAHARASHTRA SOCIAL FORESTRY PROJECT 386-0478

Annex 2

Life of Project: From FY 82 to FY 90
 Total U.S. Funding: \$30 million
 Date prepared: June 28, 1982

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions																																																		
<p>Goals:</p> <ol style="list-style-type: none"> Increase supply of firewood, fodder, fruit, and building materials in rural areas. Reduce rate of deforestation. Increase rural employment. 	<ol style="list-style-type: none"> 4,300 villages actively involved in management of plantations providing fuel, fodder, fruit, and building materials over average 30 year life of plantation. 81,000 ha. of land reforested. 30 million days of employment provided. 	<ol style="list-style-type: none"> Maharashtra Horticulture and Social Forestry Department records. 	<ol style="list-style-type: none"> Social forestry extension program will gain support of villagers. Labor-intensive methods for nurseries, plantations, and harvesting continue to be used. 																																																		
<p>Purpose: Develop the institutional ability to assist villages in Maharashtra to manage communal and private lands for increased and sustained production of forest products.</p>	<p>End of Project Status (EOPs):</p> <ol style="list-style-type: none"> Social Forestry organization is fully staffed and operational. Nurseries able to supply 23 million seedlings of satisfactory quality a year. Social forestry extension staff covers 4,300 villages. Farmer demand for seedlings for private lands increasing. Increased amounts of village land available for reforestation. 81,000 ha. tree plantations established yielding average of 10M³ per ha. per year. 4,300 management plans accepted by gram panchayats. 	<ol style="list-style-type: none"> Maharashtra Horticulture and Social Forestry Department records. AID monitoring and evaluation reports. 	<ol style="list-style-type: none"> Qualified indigenous personnel recruited and trained in sufficient numbers. Current forestry department staff who have skills and experience to initiate program made available. Farmers deem planting of seedlings on own land profitable. Villagers believe communal land forest products will accrue to them in accordance with the accepted management plan. 																																																		
<p>Outputs:</p> <ol style="list-style-type: none"> Community and private plantations of firewood, fodder, fruit and other species. District and private nurseries. Experienced extension staff. Research reports. 	<p>Magnitude of Outputs:</p> <ol style="list-style-type: none"> 81,000 ha. planted a. 54 district nurseries. b. 4,300 private nurseries. 700 trained extension staff. 150 research reports. 	<ol style="list-style-type: none"> Maharashtra Horticulture and Social Forestry Department records. AID monitoring and evaluation reports. 	<ol style="list-style-type: none"> Villages have and are willing to commit portions of their common land for woodlot plantations. Severe climate conditions (monsoon failures) do not occur. 																																																		
<p>Inputs: (\$ million)</p> <table border="1"> <thead> <tr> <th></th> <th>AID</th> <th>GOI</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1. Technical Asst:</td> <td>3.3</td> <td>-</td> <td>3.3</td> </tr> <tr> <td>2. Training:</td> <td>1.7</td> <td>-</td> <td>1.7</td> </tr> <tr> <td>3. Financial:</td> <td>25.0</td> <td>30.0</td> <td>55.0</td> </tr> <tr> <td>Total</td> <td>30.0</td> <td>30.0</td> <td>60.0</td> </tr> </tbody> </table>		AID	GOI	Total	1. Technical Asst:	3.3	-	3.3	2. Training:	1.7	-	1.7	3. Financial:	25.0	30.0	55.0	Total	30.0	30.0	60.0	<p>Implementation Targets (\$ million)</p> <table border="1"> <thead> <tr> <th>U.S. FY:</th> <th>83</th> <th>84</th> <th>85</th> <th>86</th> <th>87</th> <th>88</th> <th>89</th> <th>90</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Loan</td> <td>1.9</td> <td>3.0</td> <td>3.6</td> <td>5.4</td> <td>5.7</td> <td>2.2</td> <td>2.2</td> <td>1.0</td> <td>25.0</td> </tr> <tr> <td>Grant</td> <td>.6</td> <td>.9</td> <td>1.0</td> <td>.8</td> <td>.5</td> <td>.4</td> <td>.4</td> <td>.4</td> <td>5.0</td> </tr> </tbody> </table>	U.S. FY:	83	84	85	86	87	88	89	90	Total	Loan	1.9	3.0	3.6	5.4	5.7	2.2	2.2	1.0	25.0	Grant	.6	.9	1.0	.8	.5	.4	.4	.4	5.0	<p>AID reports</p>	<ol style="list-style-type: none"> Highly motivated persons with technical skills required can be recruited. Qualified candidates for training are available. GOI financial resources provided.
	AID	GOI	Total																																																		
1. Technical Asst:	3.3	-	3.3																																																		
2. Training:	1.7	-	1.7																																																		
3. Financial:	25.0	30.0	55.0																																																		
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U.S. FY:	83	84	85	86	87	88	89	90	Total																																												
Loan	1.9	3.0	3.6	5.4	5.7	2.2	2.2	1.0	25.0																																												
Grant	.6	.9	1.0	.8	.5	.4	.4	.4	5.0																																												

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NURSERY COSTS*

I T E M	COST PER 1000 SEEDLINGS (Rs.)			Total
	Labor	Materials	Other	
Rental charges for nursery site (if necessary)	-	-	6	6
Thorn fencing	10	-	-	10
Preparation of site for keeping polythene bags	3	-	-	3
Cost of seed	-	7	-	7
Cost of polythene bags in 12.5 cm x 25 cm size: 200 gauge 1000 Nos. @ .08 Rs./bag	-	80	-	80
Polythene sheet of size 13.5 m x 1.5 m for use as carpet	-	60	-	60
Purchase of FYM (Farm yard manure)	-	5	-	5
Preparing mixture of soil/sand/FYM in pro- portion of 1:1:1	7	-	-	7
Filling of polythene bags	10	-	-	10
Sowing of seed in polythene bags	5	-	-	5
Watering plants from April to June	45	-	-	45
Application of fertilizer and insecticides	1	4	-	5
Contingencies	-	-	7	7
T O T A L	81	156	13	250

Note: Adding cost of 15% more seedlings for discarding weaker seedlings in nursery, the total cost per 1000 seedlings will be as follows:

Preparation	41	194	235
Maintenance	52	-	52
Grand Total:	93	194	287
Price adjusted to 1982	113.41	236.59	350.00**
Dollar Equivalent (Rs.9.4 = \$1.00)	\$12.00	\$25.00	\$37.00

*Based on Small Plants - 6 to 8 months old (more than 95% of Total Seedlings)

**Includes an inflation of approximately 16%

Source: Maharashtra Horticulture and Social Forestry Department 1982

SAMPLE
SEEDLING REQUISITION FORM

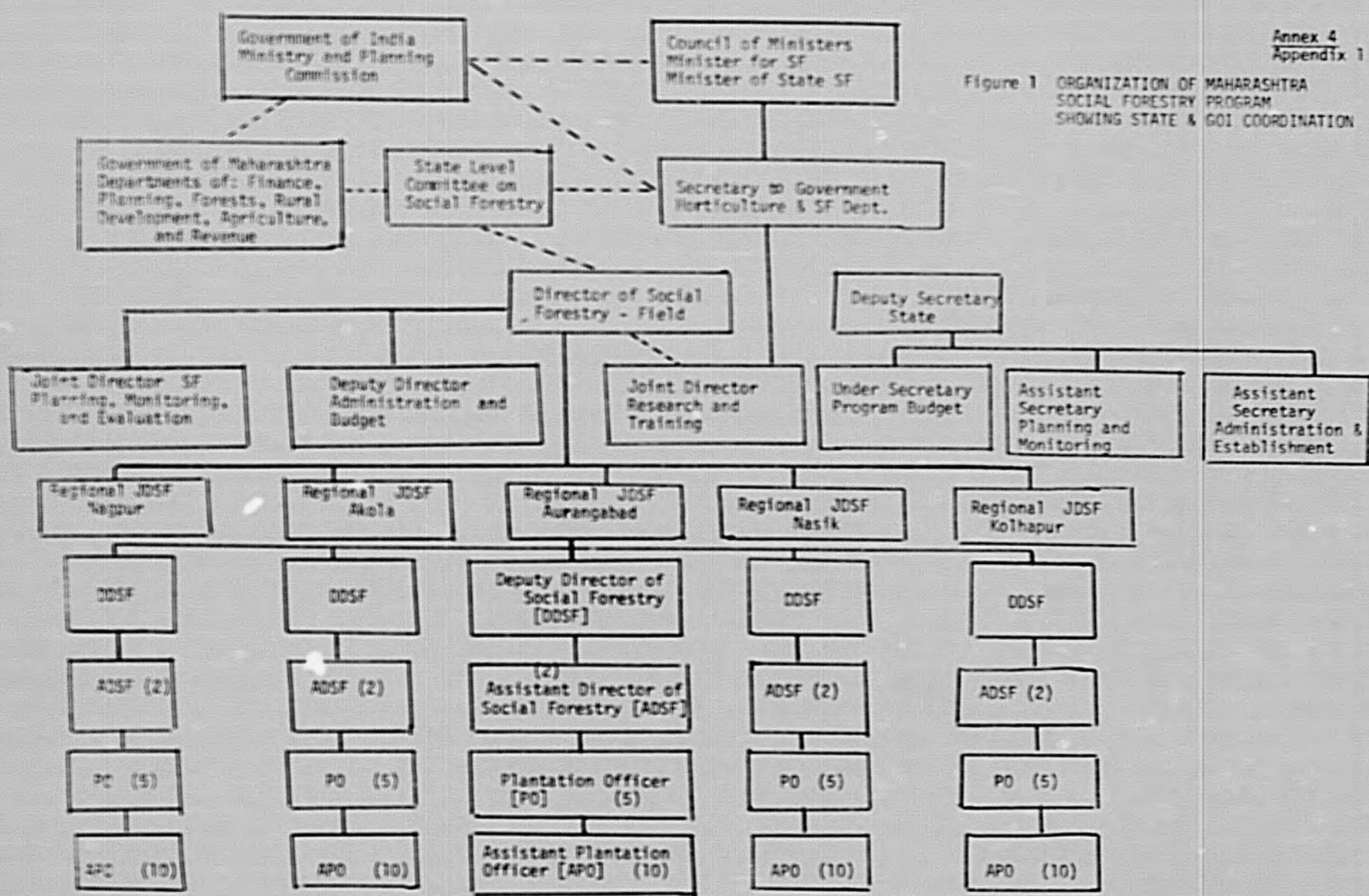
SPECIES* Desired/Agreed by Villagers	HECTARES TO BE PLANTED	SPACING RECOMMENDED	TOTAL SEEDLINGS NEEDED
<u>Gmelina arborea</u>			
<u>Azadirachta indica</u>			
<u>Acacia spp.</u>			
<u>Terminalia spp.</u>			
<u>Albizia spp.</u>			
<u>Casuarina spp.</u>			
<u>Leucaena leucocephala</u>			
<u>Eucalyptus spp.</u>			
<u>Mangifera indica</u>			
<u>Anacardium occidentale</u>			
<u>Tamarindus indica</u>			
<u>Zizyphys spp.</u>			
TOTAL	_____	_____	_____

Date required: _____

Type of plantation: Block/private/watershed/strip/tribal

* This listing represents only a small sample of the 60 different tree species and 13 grasses and leguminous herbs that have been suggested by the project design team. A more detailed description of the various silvicultural prescriptions can be found in the technical report on file with the Office of Agriculture and Rural Development at the AID Mission in New Delhi.

Figure 1 ORGANIZATION OF MAHARASHTRA SOCIAL FORESTRY PROGRAM SHOWING STATE & GOI COORDINATION



MAHARASHTRA SOCIAL FORESTRY PROJECT
PERSONNEL POSITIONS

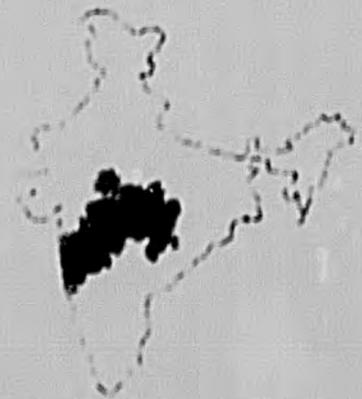
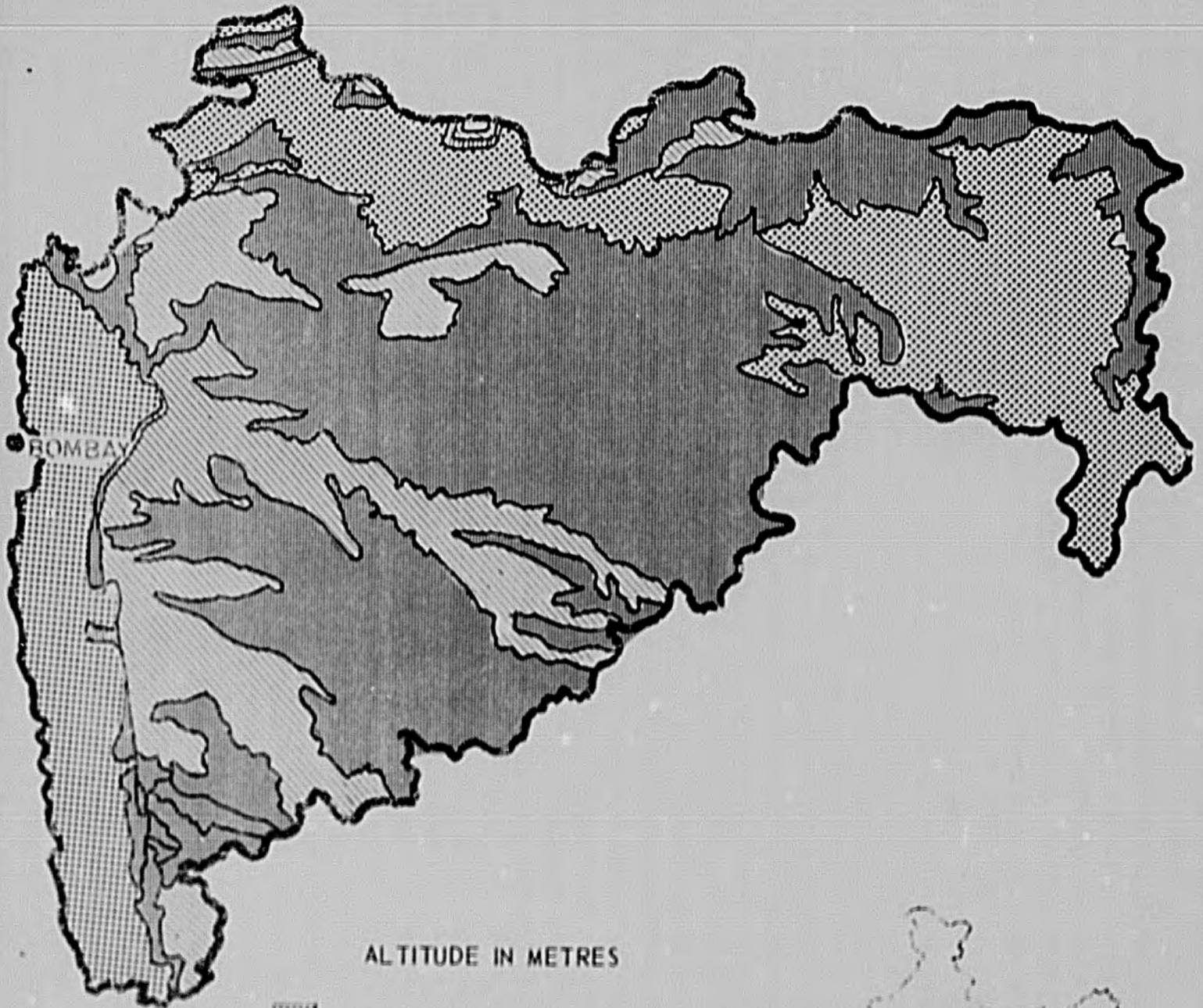
POSITIONS

	<u>Head Office</u>	<u>Circle Offices</u>	<u>Divisions</u> (one circle) ↓	<u>Total</u> 1 (Division) ↓	
1. Professional Staff					
Director of S.F.	1	-	-	-	1
Jt. Director	2	5	1	-	7
Dy. Director	1	-	-	27	28
Assistant Director	5	5	1	54	64
Surveyors	-	-	-	75	75
	<u>9</u>	<u>10</u>	<u>2</u>	<u>156</u>	<u>6</u> <u>178</u>
2. Administrative Staff					
Dy. Dir. Admin. & Budget	1	-	-	-	1
Asst. Dir. Admin. & Public Relations	1	-	-	-	1
Asst. Pub. Relations Officer	-	5	1	-	5
Office Superintendent	3	5	1	-	8
Head Clerks	3	5	1	27	35
Accountants	6	10	2	54	70
Stenographers Sr.	3	5	1	-	8
Stenographers Jr.	5	-	-	27	32
Statistical Assistants	2	5	1	-	7
Clerks/Typists	12	25	5	243	280
	<u>36</u>	<u>60</u>	<u>12</u>	<u>351</u>	<u>13</u> <u>447</u>
3. Technical Staff					
Subject Matter Specialist	3	-	-	-	3
Research Officer	2	-	-	-	2
Research Assistants	2	-	-	-	2
Plantation Officers	-	-	-	270	270
Plantation Assistants*/	-	-	-	540	540
	<u>7</u>	<u>-</u>	<u>-</u>	<u>675</u>	<u>25</u> <u>682</u>
4. Custodial Staff					
Drivers	3	5	1	81	89
Peons	16	30	6	108	154
Watchmen	2	5	1	27	34
Cleaners	-	-	-	27	27
Total	<u>21</u>	<u>40</u>	<u>8</u>	<u>243</u>	<u>9</u> <u>304</u>
	<u>73</u>	<u>110</u>	<u>22</u>	<u>1425</u>	<u>53</u> <u>1608</u>

*/ And other field staff

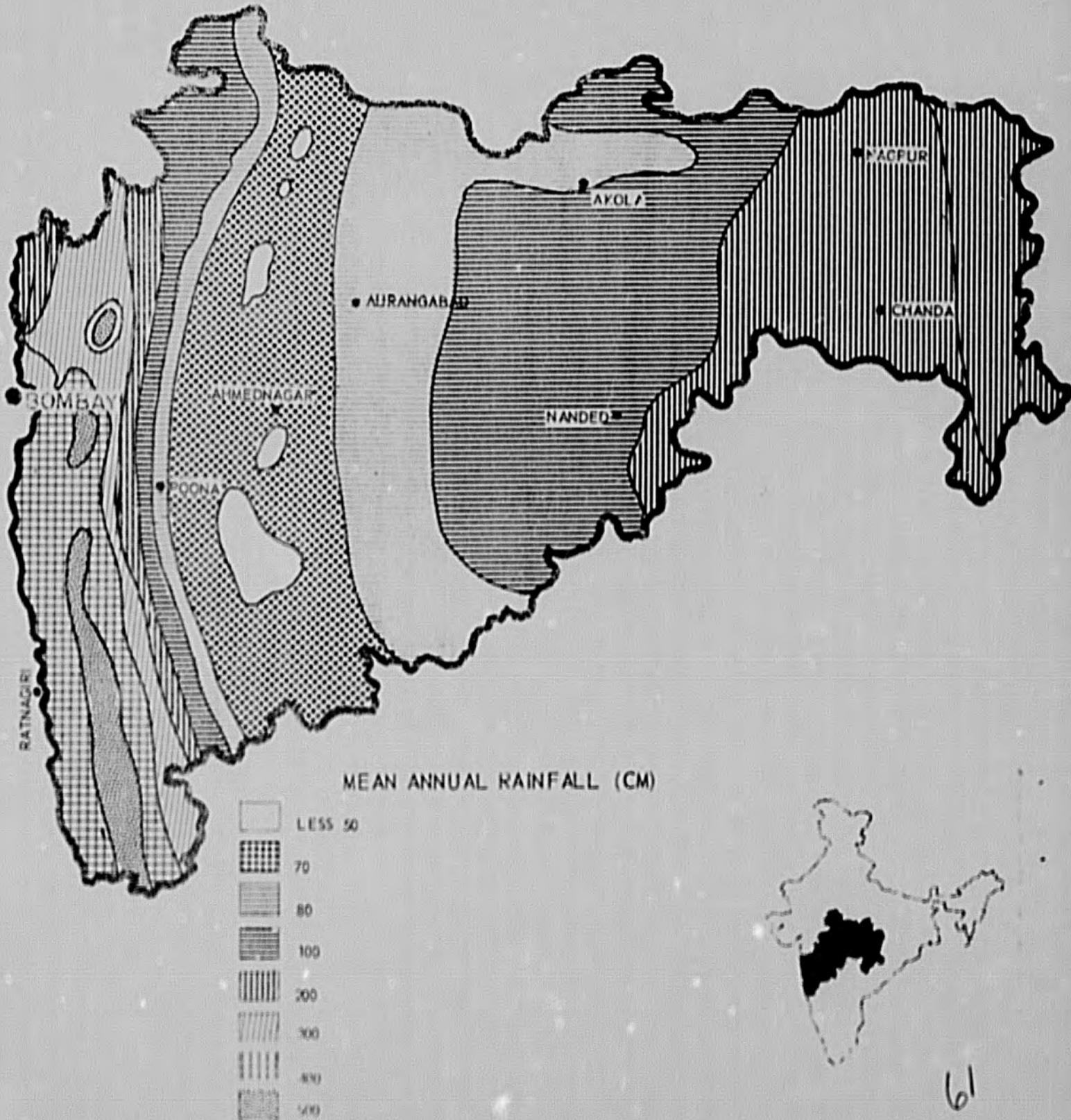
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Annex 5
Map 1



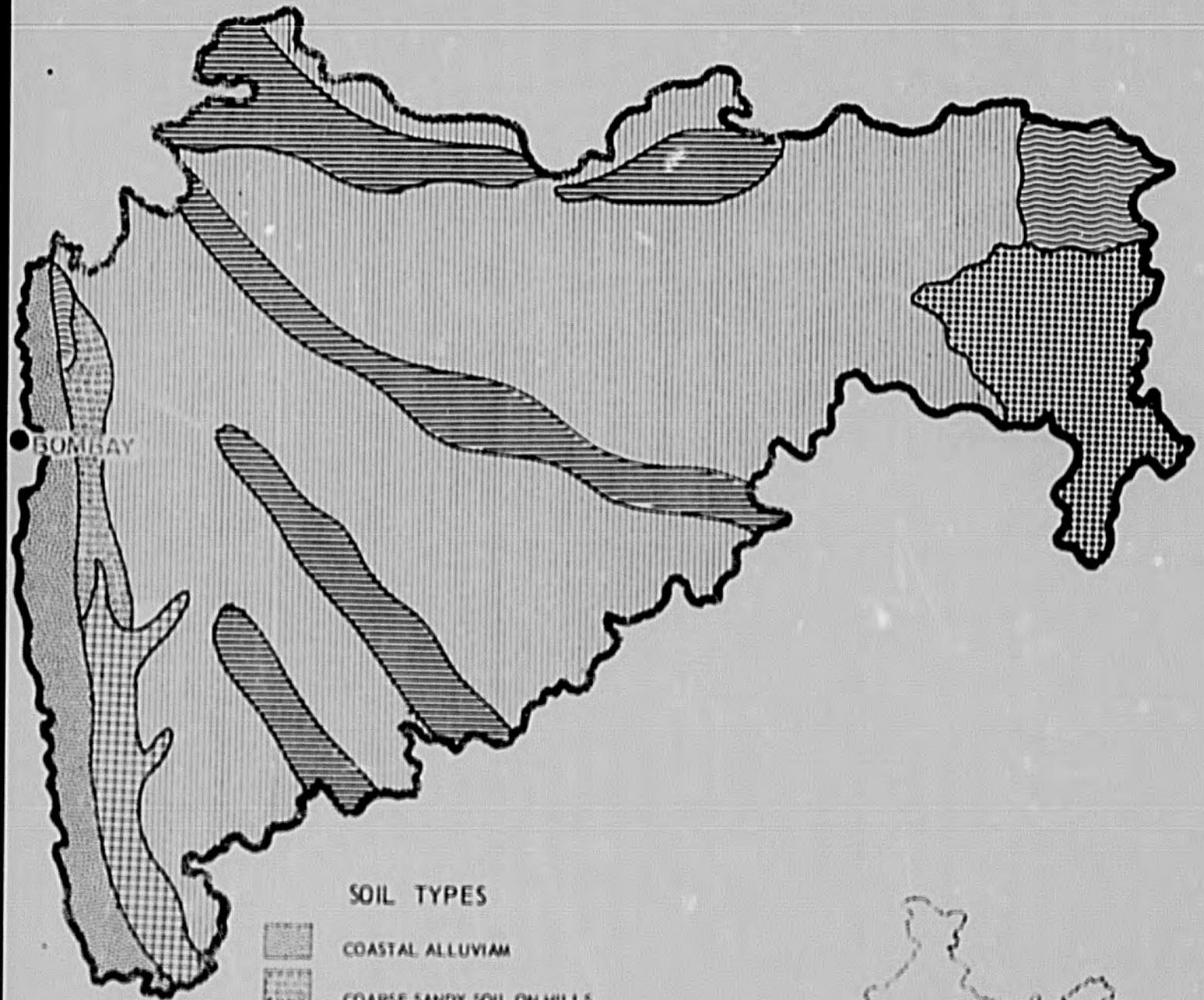
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Annex 5
Map 2



MAHARASHTRA

Ann x 5
Map 3



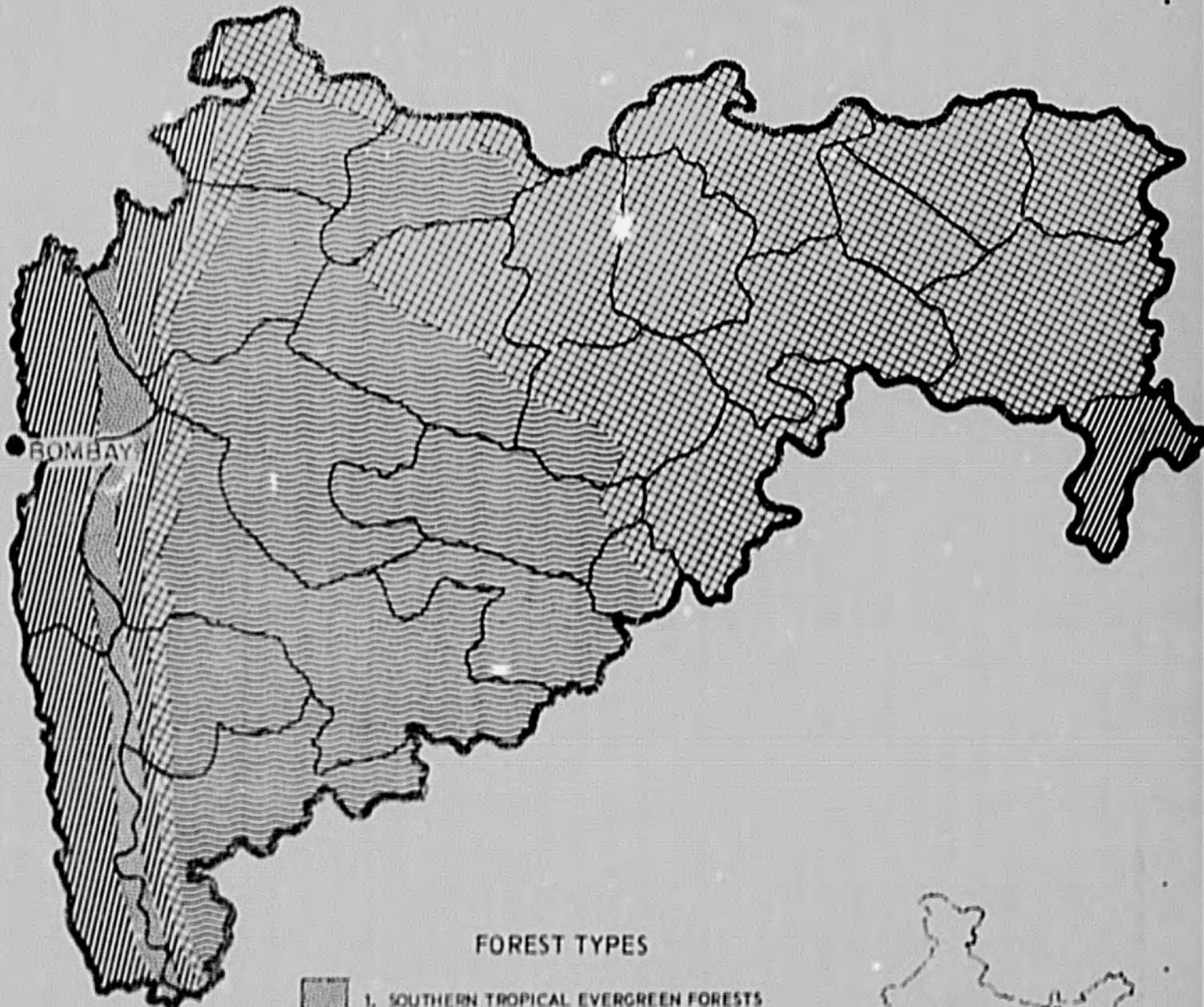
SOIL TYPES

-  COASTAL ALLUVIAM
-  COARSE SANDY SOIL ON HILLS
-  CLAY LOAM & SANDY LOAM
-  SANDY & LIGHT SOILS
-  LATERITE SOIL
-  DEEP BLACK SOIL
-  MEDIUM BLACK SOIL



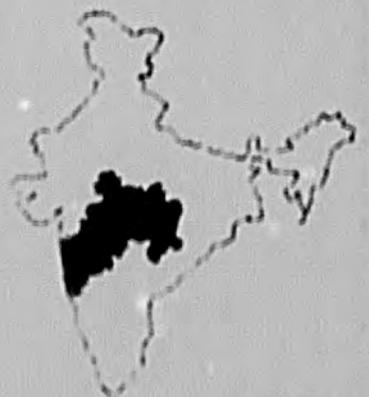
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Annex 5
Map 4



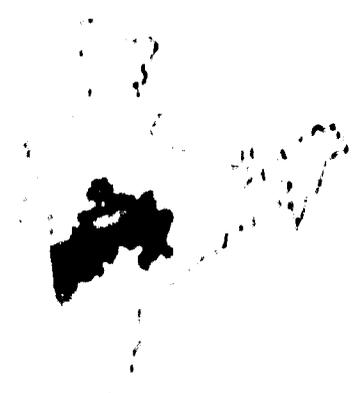
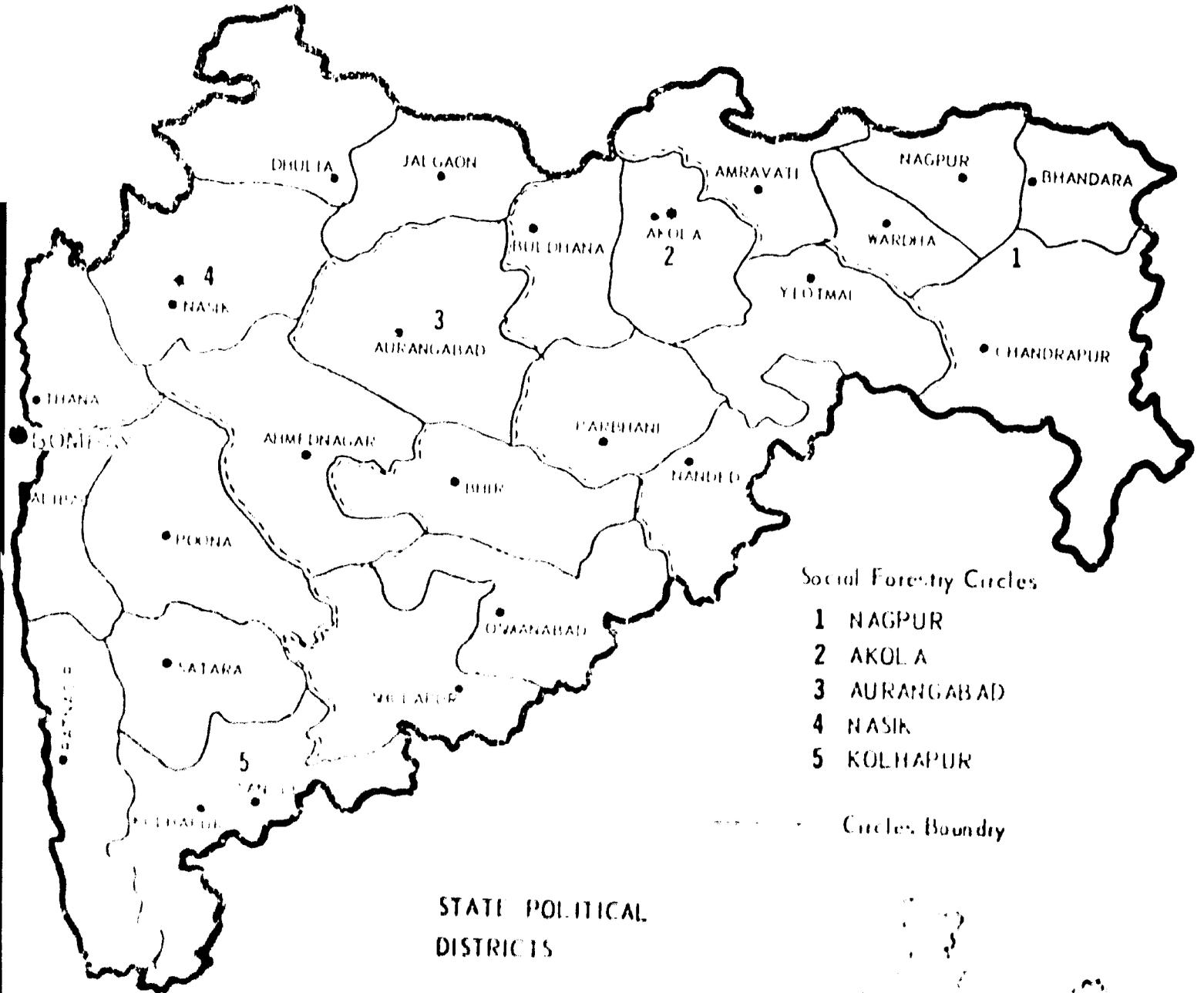
FOREST TYPES

-  1. SOUTHERN TROPICAL EVERGREEN FORESTS
-  2. SOUTHERN TROPICAL MOIST DECIDUOUS FORESTS
-  3. SOUTHERN TROPICAL DRY DECIDUOUS FORESTS
-  4. SOUTHERN TROPICAL THORN FORESTS
-  5. SOUTHERN SUB-TROPICAL WET HILL FORESTS



MAHARASHTRA

Chapter 5
Map 5



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PROJECTION OF EXPENDITURES: PLANTATION IMPLEMENTATION AND REIMBURSEMENT SCHEDULE
(\$000)

Annex 6
Table T

1. Projections by Project Calendar Year (Coincides with U.S. Fiscal Year)

Trigger Points	Amount to be reimb.	Project Year 1		Project Year 2		Project Year 3		Project Year 4		Project Year 5		Project Year 6		Project Year 7		Project Year 8		T O T A L	
		Units	Amount	Units	Amount														
Mgt. Plan Approved	3.2	540	1,728	800	2,560	800	2,560	1080	3,456	1080	3,456	-	-	-	-	-	-	4300	13,760
Plantation Completed	0.6	270	162	670	402	800	480	940	564	1080	648	540	324	-	-	-	-	4300	2,580
Survival Report	2.0	-	-	-	-	270	540	670	1,340	800	1,600	940	1,880	1080	2,160	540	1,080	4300	8,600
Total, Each Plantation	5.8		1,890		2,962		3,580		5,360		5,704		2,204		2,160		1,080		24,940

2. Projections by Indian Fiscal Year

		10/82-03/83		IFY 83-84		IFY 84-85		IFY 85-86		IFY 86-87		IFY 87-88		IFY 88-89		IFY 89-90		04/90-09/90		TOTAL	
		Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount	Units	Amount
Mgt. Plan Approved	3.2	270	864	670	2,144	800	2,560	940	3,008	1080	3,456	540	1,728	-	-	-	-	-	-	4300	13,760
Plantation Completed	0.6	-	-	270	162	670	402	800	480	940	564	1080	648	540	324	-	-	-	-	4300	2,580
Survival Report	2.0	-	-	-	-	-	-	270	540	670	1,340	800	1,600	940	1,880	1080	2,160	540	1,080	4300	8,600
Total, Each Plantation	5.8		864		2,306		2,962		4,028		5,360		3,976		2,204		2,160		1,080		24,940

USAID/PD: June 28, 1982

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SUMMARY BUDGET FOR IT UNIT, TRAINING RESEARCH AND EVALUATION
(\$000)

Description	10/82-03/83	IFY 83-84	IFY 84-85	IFY 85-86	IFY 86-87	IFY 87-88	IFY 88-89	IFY 89-90	04/90-09/90	TOTAL
Information & Technology Unit	222.36	366.22	401.65	441.79	380.70	313.70	345.15	379.60	198.80	3,050.00
Overseas Training	-	256.00	420.00	348.90	95.10	-	-	-	-	1,120.00
In-Country Training	-	152.50	130.40	115.10	70.00	72.00	-	-	-	540.00
Research	-	47.20	50.00	48.80	47.00	47.00	-	-	-	240.00
Evaluation	-	-	-	20.00	-	-	-	-	30.00	50.00
T O T A L \$	222.36	821.92	1002.05	974.59	592.83	432.70	345.15	379.60	228.80	5,000.00

Rate of Exchange \$1.00 = Rs.9.40

USAID/PD: June 28, 1982

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INFORMATION AND TECHNOLOGY UNIT -- PROJECTED EXPENDITURES

Annex 6
Table 3

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	TOTAL
A. IT UNIT RESIDENT STAFF -- TOTAL.....	267,500	280,875	294,920	309,664	165,593	173,872	45,207	47,466	1,585,097
1. Expatriate: Research, Administration -- Salary.....	40,000	42,000	44,100	46,305	-	-	-	-	172,405
2. Benefits and Support.....	50,000	52,500	55,125	57,881	-	-	-	-	215,506
3. Expatriate: Training, Extension, Community Mobilization	35,000	36,750	38,588	40,517	42,543	44,670	-	-	238,067
4. Benefits and Support.....	50,000	52,500	55,125	57,881	60,775	63,814	-	-	340,095
5. Institutional Overhead -- 50% of Salaries (1+3).....	37,500	39,375	41,344	43,411	21,272	22,335	-	-	205,237
6. Subtotal Expatriates.....	212,500	223,125	234,282	245,995	124,590	130,819	-	-	1,171,311
7. Indian Professionals: 3 until end of 4th year, then 2...	42,000	44,100	46,305	48,620	34,034	35,736	37,523	39,399	327,717
8. Clerical/Administrative: 3 until end of 4th yr., then 1..	8,000	8,400	8,820	9,261	3,241	3,403	3,574	3,752	48,452
9. Benefits, Fringes.....	5,000	5,250	5,513	5,788	3,728	3,914	4,110	4,315	37,617
10. Subtotal Indian Staff.....	55,000	57,750	60,638	63,669	41,003	43,053	45,207	47,466	413,786
B. IT OPERATING COSTS -- TOTAL.....	112,400	69,800	73,292	76,955	50,967	53,516	48,149	50,557	535,636
1. Professional Staff Travel (Each Professional out once a month times \$500).....	30,000	31,500	33,075	34,729	21,879	22,973	16,081	16,885	207,122
2. Office Rent/Utilities.....	25,000	26,250	27,563	28,941	20,000	21,000	22,050	23,153	193,957
3. Non-Expendable Property, including Maintenance.....	47,400	1,550	1,628	1,709	1,794	1,885	1,978	2,077	60,021
4. Supplies, Maintenance.....	5,000	5,250	5,513	5,788	3,647	3,829	4,020	4,221	37,268
5. Miscellaneous.....	5,000	5,250	5,513	5,788	3,647	3,829	4,020	4,221	37,268
C. SHORT TERM CONSULTANTS -- TOTAL.....	35,000	203,863	256,931	205,961	120,086	54,457	27,926	25,043	929,267
1. Personal Services Contract - U.S.....	28,000	161,276	187,810	150,107	69,817	34,909	13,963	13,891	659,773
2. Personal Services Contract - Indian.....	7,000	42,587	69,121	55,854	50,269	19,548	13,963	11,152	269,494
D. TOTAL ITU EXPENDITURES	414,900	554,538	625,143	592,580	336,646	281,845	121,282	123,066	3,050,000

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PANCHAYAT - H&SFD
MANAGEMENT PLAN

1. Purpose

The Management Plan described below and hereinafter referred to as the Plan is to be used in the implementation and evaluation of the Maharashtra Social Forestry Project administered by the GOM through the Horticulture and Social Forestry Department (H&SFD). The Plan is intended to present a framework for communication and cooperation between the H&SFD, the panchayat and participating individuals. Its primary function is to insure the involvement of the panchayat and villagers in the planning and execution of the plantation program. It will also serve as a means of facilitating the H&SFD's on-going monitoring and evaluation program and the parallel AID auditing needs.

2. Content

An outline of the Plan is given below in paragraph 4 of this paper. Section II of the Plan calls for a definition of objectives and Section III provides a description of the socio-economic and environmental context in which a village social forestry program is to be developed. Through sample surveys of client villages, H & SFD staff will learn of villagers' needs and preferences and thus develop basic information required for H&SFD evaluation of project impact. Section IV of the outline describes a series of analyses leading to a comprehensive definition of village forest product needs considering energy and fodder requirements in the light of other land use and development programs. In Section V, activities recommended by the H&SFD are described. Section VI describes administrative and fiscal arrangements between the panchayat and the H&SFD regarding implementation of the Plan. These

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arrangements include but are not limited to:

- a. Assignment of administrative responsibilities between the H&SFD and the panchayat before and after transfer of major responsibilities for management of community plantations from the H&SFD to the panchayat and the criteria for determining if such a transfer should occur;
- b. Basis upon which produce obtained from the village plantation will be sold and distributed;
- c. Financial arrangements, including the audit procedures, to be established between the H&SFD and the panchayat;
- d. Schedules and budgets for Plan implementation;
- e. Recourse both parties have in case of default or disagreement.

Section VII includes various documents and records which would be useful in (a) monitoring and evaluation of the project and (b) acquainting newly-posted staff officers or panchayat officials of previously agreed upon conditions, actions or schedules.

3. Planning Process

The Management Plan will be prepared by the H&SFD in cooperation with the panchayat and participating individuals. After initial contact and expression of interest by the panchayat, extension personnel will visit the village to explain the program and ensure that the villagers have a realistic understanding and genuine interest in the program. If after this meeting there is mutual agreement to develop a village program, the Plantation Officer (PO) and Assistant Plantation Officer (APO), in consultation with village representatives and participating individuals will prepare the Management Plan as outlined below. Subsequently, the H&SFD, in collaboration with the panchayat or appropriately designated committees or individuals, will

survey village needs, preferences, and land production capabilities. These data will also provide the information needed to prepare the in-depth evaluation of project impact required in years three and eight.

When the H&SFD staff have formulated and approved a plan responsive to local need and consistent with the H&SFD program goals, a second general meeting will be held with the panchayat to explain the proposal. Copies of the proposed plan will be made available to the panchayat before the meeting in format and language appropriate for literate members of the village. At the general meeting chaired by the panchayat leader, the H&SFD staff will clearly explain the proposal and highlight details important to the villagers. Both the villagers' responsibilities and the benefits will be stressed. Costs, both financial and non-monetary, will also be thoroughly explained. Finally, administrative arrangements for implementation of the program, including the distribution of its benefits, will be carefully articulated. After these discussions, H&SFD will request that the panchayat, by resolution, endorse the proposal as written for the community plantations or make specific recommendations for change within a specified period of time. If substantive changes in the proposal are requested, additional meetings with the panchayat or its designees will be held to work out a mutually acceptable proposal. The final Plan for community plantations must be approved by resolution of the panchayat and be acceptable to the H&SFD in accordance with guidelines developed in conjunction with AID. It is expected that the preparation of a village Management Plan will take approximately three months from the time the APO first discusses the program with the villagers to the final agreement.

4. MANAGEMENT PLAN OUTLINE

I. Summary of Recommended Plan

II. Overview and Objectives

- A. Authority for H&SFD and program objectives
- B. General description of proposed village social forestry program
- C. Objectives of this plan

III. Review of Existing Situation

- A. Land capability and environmental conditions, including wildlands production
- B. Land use and ownership
- C. Village social structure
- D. Human resources: availability, education, employment
- E. Economic activity, e.g. forestry, agriculture, agriculture processing, cottage industry and handicraft, modern industry, commercial activity
- F. Infrastructure and social services
- G. Energy production and consumption
- H. Market and credit facilities
- I. Related economic development activities

IV. Analyses

- A. Supply and Demand for energy and various forest products, including fodder, firewood and building poles
- B. Species, silvicultural systems and conservation practices recommended to provide desired forestry products
- C. Determination of project beneficiaries and design of distribution system

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V. Planned Activities

- A. Nursery production
- B. Plantation establishment and arrangement
- C. Training
- D. Demonstration
- E. Monitoring

VI. Implementation

- A. Administration arrangements between panchayat and H&SFD
- B. Schedule of program activities
- C. Schedule of nursery production, site preparation, planting, tending and harvesting operations and specifications for same, sample seedling requisition form
- D. Budget showing income and expenditures

VII. Annexes

- A. Minutes of meeting held with panchayat and other organizations involved
- B. Copies of actions taken by panchayat and H&SFD approving or amending the Management Plan
- C. Records of: (1) persons receiving produce and market value of same; (2) produce sold or otherwise distributed
- D. Records of operational expenditures
- E. Statistical data supporting Sections III, IV, or V
- F. Map of village showing proposed planting areas and possible expansion sites

Maharashtra Social Forestry Project
Initial Environmental Examination

Project Location : India
Project Title : Maharashtra Social Forestry
Life of Project : 5 years, FY 82 commencement
Funding : LOP : \$25.0 million
I.E.E. Prepared by : Peter J. Bloom, USAID/India - May 1980
Environmental Action Required : Negative Determination
Mission Concurrence : Priscilla M. Boughton
Priscilla M. Boughton
Director, USAID/India
Date _____
Assistant Administrator Decision: Approved J. F. Hill
Disapproved _____
Date 6/27/80

Best Available Document

COUNTRY CHECKLIST

Listed below are, first, statutory criteria applicable generally to FAA funds, and then criteria applicable to individual fund sources: Development Assistance and Economic Support Fund.

A. General Criteria for Country Eligibility

- | | |
|---|--|
| <p>1. <u>FAA Sec. 113.</u> Has particular attention been given those programs, projects, and activities which tend to integrate women into the national economies of developing countries, thus improving their status and assisting the total development effort?</p> | <p>This project is designed to improve the productivity and incomes of the rural poor in Maharashtra; both men and women will benefit equitably.</p> |
| <p>2. <u>FAA Sec. 116.</u> Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights?</p> | <p>The assistance will directly benefit the needy.</p> |
| <p>3. <u>FAA Sec. 481.</u> Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics, drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the United States unlawfully?</p> | <p>No.</p> |
| <p>4. <u>FAA Sec. 620(b).</u> If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?</p> | <p>Yes.</p> |

5. FAA Sec. 620(c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?

No.

6. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizen or entities?

No.

7. FAA Sec. 620(a), 620(f), 620D; Continuing Resolution Sec. 511, 512 and 513; ISDCA of 1980 Secs. 717 and 721. Is recipient country a Communist country? Will assistance be provided to Angola, Cambodia, Cuba, Laos or Vietnam? (Food and humanitarian assistance distributed directly to the people of Cambodia are excepted). Will assistance be provided to Afghanistan or Mozambique without a waiver? Are funds for El Salvador to be used for planning for compensation, or for the purpose of compensation, for the confiscation, nationalization, acquisition or expropriation of any agricultural or banking enterprise, or property or stock thereof?

No. No assistance will be provided to these countries.

8. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression?

No.

9. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property?

No.

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10. FAA Sec. 620(k). Does the program furnish assistance in excess of \$100,000,000 for the construction of a productive enterprise, except for productive enterprises in Egypt that were described in the Congressional Presentation materials for FY 1977, FY 1980 or FY 1981?

No.

11. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason?

Not applicable.

12. FAA Sec. 620(m). Is the country an economically developed nation capable of sustaining its own defense burden and economic growth and, if so, does it meet any of the exceptions to FAA Section 620(m)?

Not applicable.

13. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec.5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters:

No such actions have been taken against U.S. fishing activities in international waters.

a. has any deduction required by the Fishermen's Protective Act been made?

b. has complete denial of assistance been considered by AID Administrator?

14. FAA Sec. 620(a); Continuing Resolution Sec. 518.

(a) Is the government of the recipient country in default for more than 6 months on interest or principal of any AID loan to the country?

No.

(b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds?

No.

15. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount spent for the purchase of sophisticated weapons systems? (An affirmative answer may refer to the record of the annual "Taking Into Consideration" memo: "Yes, as reported in annual report on implementation of Sec. 620(s)". This report is prepared at time of approval by the Administrator of the Operational Year Budget and can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

Yes. India spends a relatively small amount of its foreign exchange on military equipment. Latest available figures are an estimated \$300-\$500 million military imports or 3 percent of \$15.8 billion of total imports in IFY 80-81 and in 81-82. India proposes to spend only 16% of its budget on defense in U.S. FY 82-83

16. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?

Diplomatic relations have not been severed.

17. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget?

India is not in arrears regarding its U.N. obligations.

18. FAA Sec. 620A; Continuing Resolution Sec. 521. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism?

No.

19. FAA Sec. 666. Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA?

No.

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20. FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it detonated a nuclear device after August 3, 1977, although not a "nuclear weapon State" under the non-proliferation treaty?

Based on information received from the State Department/Embassy the answer to both of these questions is no.

B. Funding Criteria for Country Eligibility

1. Development Assistance Country Criteria

a. FAA Sec. 102(b)(4). Have criteria been established and taken into account to assess commitment progress of country in effectively involving the poor in development, on such indexes as: (1) increase in agricultural productivity through small-farm labor intensive agriculture, (2) reduced infant mortality, (3) control of population growth, (4) equality of income distribution, (5) reduction of unemployment, and (6) increased literacy?

Yes. These criteria are based on India's Five Year Development Plan as Revised (1980-85) and are incorporated in the Country Development Strategy Statement (CDSS).

b. FAA Sec. 104(d)(1). If appropriate, is this development (including Sahel) activity designed to build motivation for smaller families through modification of economic and social conditions supportive of the desire for large families in programs such as education in and out of school, nutrition, disease control, maternal and child health services, agricultural production, rural development, and assistance to urban poor?

Yes.

2. Economic Support Fund Country Criteria

This section not applicable. Assistance is provided under the Development Assistance category.

PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual fund sources: Development Assistance (with a sub-category for criteria applicable only to loans); and Economic Support Fund.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP-TO-DATE? Yes

HAS STANDARD ITEM CHECKLIST BEEN
REVIEWED FOR THIS PROJECT? Yes

A. General Criteria for Project

1. Continuing Resolution Unnumbered: FAA Sec. 653(b); Sec. 634A. (a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure)?
(a) Congressional Committees will be notified through the Congressional notification procedure.
(b) Yes.
2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
(a) Yes.
(b) Yes.
3. FAA Sec. 611(a)(2). If further legislation action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?
None needed.
4. FAA Sec. 611(b); Continuing Resolution Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?
Not applicable.

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?

Yes.

6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.

No, because multilateral and other donors have similar projects and the GOI requested AID assistance in this case. However, the project will benefit other, similar projects in other states in India in the fields of Social Forestry and agricultural development. Regional development programs are not pertinent to state-sponsored projects.

7. FAA Sec. 601(a). Information and conclusion whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loans associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

(a) No effect.

(b) Yes. Especially at the village level.

(c) Yes.

(d) Yes.

(e) Yes.

(f) No effect.

8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

U.S. technical assistance will be provided under this project; technical collaboration between U.S. and Indian private institutions will be encouraged.

9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.

The GOI will contribute sufficient amounts of local currencies for contractual and other services. (See item 10 for U.S. owned currencies

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

The U.S. owned Rupees are being used for various U.S. government agencies' program and administrative support and these currencies are expected to be liquidated over the next seven years.

11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

Yes.

12. Continuing Resolution Sec. 522. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity.

Not applicable. Agricultural products produced will be consumed in India.

B. Funding Criteria For Project

1. Development Assistance Project Criteria

a. FAA Sec. 102(b); 113; 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural

(a) These represent the entire intent of the project.

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areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic, private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participating of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A, 104, 105, 106 & 107. Is assistance being made available (including only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source):

(1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is designed to increase productivity and income of rural poor.

c. [107] is appropriate effort placed on use of appropriate technology?

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

(b) Local organizations to establish and operate tree plantations will be created. Co-operative modes may be tried.

(c) This project entirely supports Indian self-help in agricultural development.

(d) See Social Soundness Analysis in the Project Paper.

(e) Not applicable.

The project is specifically designed to increase productivity of the rural poor, especially small farmers.

c. Yes, especially regarding agricultural inputs and improved forest management.

Yes.

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e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to the Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

Not applicable.

f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilize the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental and political processes essential to self-government.

The project addresses the need for increased production of forest products. Institutional development will be fostered insofar as the host country's implementing agencies will acquire a strengthened capacity to design, execute and maintain an effective statewide social forestry program. Co-operative activities will be strengthened, encouraging local, self-government efforts.

g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase or productive capacities and self-sustaining economic growth?

Yes, especially marginal land made more useful in tree production.

2. Development Assistance Project
Criteria (Loans only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

India's foreign exchange reserves are currently \$4.5 billion. This loan represents less than .005% of India's average yearly value of exports in an expanding economy.

Notes:

\$4.5 billion as of 03/31/82
(Source: Economic Trends Report of Economic Section, May 1982.)

Indian Exports:

\$8.5 billion in IFY 80-81
\$9.0 billion in IFY 81-82

(Source: Ibid.)

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b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

Not applicable.

3. Project Criteria Solely for Economic Support Fund

This Section not applicable.

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STANDARD ITEM CHECKLIST

Listed below are statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed? Yes.
2. FAA Sec. 604(a). Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him? Yes, from the U.S. - unless otherwise determined.
3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the United States on commodities financed? Yes.
4. FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? Not applicable.
5. FAA Sec. 608(a). Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items? Yes.
6. FAA Sec. 603. (a) Compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percentum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) finan- Yes.

ced shall be transported on privately owned U.S. - flag commercial vessels to the extent that such vessels are available at fair and reasonable rates.

7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

Yes.

8. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available?

Yes.

9. FY 79 App. Act Sec. 105. Does the contract for procurement contain a provision authorizing the termination of such contract for the convenience of the United States?

Not applicable.

B. Construction

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest?

Not applicable.

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

Not applicable.

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3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the United States not exceed \$100 million?

Not applicable.

C. Other Restrictions

1. FAA Sec. 122(e). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?

Yes.

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?

Yes.

3. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-bloc countries contrary to the best interests of the United States?

Yes.

4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or guaranty of such transaction?

Such financing is not permitted.

5. Will arrangements preclude use of financing:

a. FAA Sec. 104(f). To pay for performance of abortions or to motivate or coerce persons to practice abortions, to pay for performance of involuntary sterilization, or to coerce or provide financial incentive to any person to undergo sterilization?

Yes.

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property?

Yes.

- c. FAA Sec. 660. To finance police training or other law enforcement assistance, except for narcotics programs? Yes.
- d. FAA Sec. 662. For CIA activities? Yes.
- e. FY 79 App. Act Sec. 104. To pay pensions, etc., for military personnel? Yes.
- f. FY 79 App. Act Sec. 106. To pay U.N. assessments? Yes.
- g. FY 79 App. Act Sec. 107. To carry out provisions of FAA sections 209(d) and 251(h)? (Transfer of FAA funds to multilateral organizations for lending). Yes.
- h. FY 79 App. Act Sec. 112. To finance the export of nuclear equipment, fuel, or technology or to train foreign nations in nuclear fields? Yes.
- i. FY 79 App. Act Sec. 601. To be used for publicity on propaganda purposes within United States not authorized by the Congress? Yes.

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Project Description

The purpose of this eight year project is to develop the institutional capability of the Maharashtra Horticulture and Social Forestry Department (H&SFD) to assist villagers to manage their communal and private lands for increased and sustained production of forestry products. This will contribute to: (1) an increased supply of firewood, fodder, fruit, and building material in rural areas; (2) a reduced rate of deforestation; and (3) an increase in rural employment. The project's purpose will be achieved through the development of a social forestry extension program that will encompass all 27 districts in rural Maharashtra, including an estimated 4,300 village panchayats and roughly 6.5 million rural inhabitants.

The project's resources will be directed towards institutional strengthening efforts involving a partnership of public sector resources and private initiative. The principal elements of the project are: (1) expansion and strengthening of a newly created social forestry extension organization, the H&SFD; (2) the establishment of an Information and Technology (IT) Unit to support the H&SFD's extension efforts; (3) establishment of plantations on government, community and private lands with the assistance of the H&SFD as a means to developing the capability of villagers and their representatives to manage these resources; (4) creation of nursery and plantation management skills in these communities to sustain a village reforestation program; (5) provision of formal and in-service training of forestry professionals in the techniques of forestry extension, community mobilization and forestry technology; and (6) applied research focusing on the technical and socio-economic aspects of social forestry.

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The IT Unit will cooperate with the H&SFD to support effective development of an extension organization and program. Grant funds will finance a contract with a U.S. educational institution to provide the services of two long-term residents skilled in applied research and in forestry extension and training methodology. They along with three Indian professionals of comparable background and a support staff will comprise the IT Unit. The Unit will collaborate with the H&SFD in developing an applied research program that will address socio-economic, silvicultural and related social forestry problems. The Unit will assist in identification of training needs and subsequently coordinate the corresponding program. Institutions in India as well as in the U.S. and elsewhere in Asia will be involved. The Unit will be based in New Delhi in order to provide assistance to other AID-financed social forestry projects being implemented elsewhere in India.

The plantation program serves as the primary focus of the H&SFD's extension activities. Each village plantation offers a framework for imparting natural resource management skills to the villages. Plantations will be established primarily on wasteland poorly suited for crop cultivation. In most cases if this marginally used land is left untreated, continued environmental degradation will result.

During the eight years of the AID project, the program will expand to cover approximately 4,300 villages in all 27 districts of Maharashtra. The H&SFD will assist villages to establish their own nursery and reforestation programs for government, community and private lands not being fully utilized. An average of 18.5 hectares will be covered in each participating village. In addition, small private nurseries will be established in

each village. The H&SFD will provide technical assistance in forestry operations and training and leadership in the development of the ability of each village to manage its own program.

With the collaboration and cooperation of the villagers through their panchayat, or village council, a management plan will be prepared describing the production and distribution of produce from the land to be brought under the program. Roughly half of the land, or approximately 9 hectares, is expected to be government or community wasteland or strips alongside roads, railway lines, canals, etc. The other half will be in scattered plantings on private lands unsuited for agriculture such as field bunds, farm yards and marginally productive field plots.

All seedlings needed to initiate the village program will be supplied at no charge by the H&SFD, after the preconditions set out in the management plan have been met. Most of these seedlings will be grown in 54 district nurseries by the H&SFD. In addition, seedlings grown in the privately operated village and school nurseries will be purchased by H&SFD for use in the program during the first three years. Private nurseries will be sponsored by the H&SFD to create local seedling production capability and to encourage further private participation in an expansion of reforestation efforts supported by this project. After the three-year start-up period these village nurseries are expected to operate on a commercial basis. Three years after initiation of a village program, with nurseries and plantations established and operating, H&SFD staff activity at the village will be reduced to periodic visits to demonstrate innovative techniques or to respond to specific problems.

At the end of the project, a social forestry institution (H&SFD) will have been strengthened with a well trained and experienced staff in place capable of further expanding the social forestry program throughout Maharashtra. U.S. assistance will have been directed towards strengthening the monitoring and evaluation capabilities of the organization as well as in assisting in training and research. Provision of these inputs will have contributed substantially to helping solve Maharashtra's social, economic and environmental problems associated with a declining forest base. At the end of eight years an estimated 81,000 hectares will have been planted and will be managed and operated not by the H&SFD but rather by the communities in or near which they are located. The area planted during the project will supply the estimated 4,300 villages and their 6.5 million inhabitants included in the program with 20 percent of their current average annual firewood needs. With the establishment of village nurseries conditions for potentially doubling the amount of forested area under private ownership, from 36,450 to 72,900 hectares, therefore benefiting an even larger percentage of the population, will also have been created. Employment generated from plantation work is expected to total 30 million work days over the life of the project.

The AID loan of \$25 million will finance roughly half of local costs associated with establishing approximately 4,300 village programs. Vehicles and construction costs will not be eligible for financing. Fixed-amount reimbursement will be used to finance the establishment of approximately 4,300 village programs. Each such program will be reimbursed in three instalments: approval of the management plan, completion of planting, and issuance of survival report.

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The amount to be reimbursed at each of these stages and the minimum conditions to be met at each in order to warrant the reimbursement, will be agreed in Project Implementation Letters. The grant of \$5 million will be used primarily to finance the foreign exchange costs of U.S. contractor services, the procurement of a U.S. vehicle for the IT unit, and the costs of U.S. and in-country training.

The host country contribution of \$30 million equivalent will finance the balance of the costs of establishing approximately 4,300 village plantations and wholly finance the costs of vehicles and construction. The contribution more than satisfies the 25 percent requirement stipulated in FAA 110 (a).

19 AUG 1982

ACTION MEMORANDUM FOR THE ADMINISTRATOR

THRU: ES

THRU: AA/PPC, Mr. John R. Bolton

FROM: A/AA/ASIA, Eugene S. Staples

File for

ES for

Staples

Problem: Your approval is requested for a loan of \$25 million and a grant of \$5 million from the Agriculture, Rural Development and Nutrition Appropriation, Section 103 of the Foreign Assistance Act as amended, to India for the Maharashtra Social Forestry Project (386-0478).

Discussion:I. Background

About 75 million hectares of land in India are classified as forest and an estimated 20 million hectares are seriously affected by erosion. The importance of improving the protection and productivity of Indian forests has become increasingly apparent. A major review of India's forestry prospects and policies was undertaken by the National Commission of Agriculture (NCA) in the early 1970s. The Commission's final report recommended that India's strategy for forestry development focus on "production forestry" to supply the growing needs of the domestic woods products industry, and "social forestry" to supply fuelwood, fodder, small timber and other forest products to the rural population. It further recommended that each state reorganize its forestry department into production forestry and social forestry units, which many have done.

The State of Maharashtra has encountered serious deforestation problems, losing almost ten percent of its forested area in the last 20 years due to the growing need for fodder and fuelwood and the inability of traditional forestry programs to increase supply to match demand. In accordance with the Government of India's stress on social forestry programs, Maharashtra has had a social forestry program for five years. In 1981, this program was reorganized under a new Horticulture and Social Forestry Department (H&SFD), separate from Forestry and other departments. As the H&SFD is relatively new and growing, AID has an excellent opportunity to participate in its development by providing needed technical collaboration and helping it improve its responsiveness to the community it will be serving. Conventional forestry management practices have tended to focus on increased timber production with technology unsuitable for social forestry objectives. Traditional "top-down" methods utilized by forestry departments to establish reforestation programs have tended to

be unsuccessful largely due to the absence of any community participation. Through the active collaboration of Indian rural communities in the planning and management of plantations, social forestry efforts have every opportunity to succeed. With appropriate extension efforts, this process is expected to lead eventually to village management of common lands.

II. Project Description

The proposed eight-year Maharashtra Social Forestry Project will provide \$30 million to develop the institutional capability of the State of Maharashtra's social forestry program as it expands to establish 4,300 village programs in all 27 rural districts of Maharashtra. The project will support the H&SFD as it assists villagers to establish their own nurseries to provide a variety of fodder, firewood and fruit tree seedlings in support of reforestation programs on government, community, and private lands. H&SFD will also provide technical assistance in forestry operations as well as training and leadership to develop the ability of each village to manage its own social forestry program. Related project activities include:

(1) establishment of an Information and Technology (IT) Unit to support H&SFD's extension management and technical assistance efforts;

(2) establishment of plantations on government, community and private lands with the assistance of the H&SFD as a means to develop the capability of villagers and their representatives to manage these resources;

(3) creation of nursery and plantation management skills in these communities to sustain a village reforestation program;

(4) provision of formal and in-service training of forestry professionals in the techniques of forestry extension, community mobilization and forestry technology; and

(5) applied research focusing on the technical and socio-economic aspects of social forestry.

III. Financial Plan

The AID loan of \$25 million will finance roughly half of the local costs associated with establishing 4,300 village programs. These costs include such direct costs as site preparation, seedlings, fertilizer and labor as well as indirect costs such as staff and operating costs of the H&SFD. All such costs will be reimbursed from the loan on a fixed-amount basis as village programs are established and brought into operation.

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The grant of \$5 million will be used to finance the foreign exchange costs of U.S. contractor services, the procurement of a U.S. vehicle for the contractor, the costs of overseas and in-country training, and project evaluation.

The host-country contribution of \$30 million equivalent will finance the balance of the costs of establishing 4,300 village plantations and wholly finance the costs of vehicles, equipment and construction for the H&SFD.

IV. Issues Considered during Bureau Review

A. Institutional Development and Approaches to Social Forestry: The Asia Projects Advisory Committee (APAC) concluded that this project goes beyond the Madhya Pradesh Social Forestry Project in total impact on institutions and properly emphasizes private lands and private sector concerns in general. With regard to institutional impact, the project will strengthen the capability of the H&SFD to engage Indian villagers, in both public and private capacities, in the task of increasing the supply of energy in India. As already noted, the absence of community participation has been a key element in past unsuccessful attempts of forestry departments to establish reforestation programs. The objective of strengthening the H&SFD to provide an increasing supply of forest produce through additional community involvement requires extensive training in management and extension techniques as well as strengthened forestry research. This project will provide the services of U.S. forestry institutions which have developed pertinent silvicultural, managerial and social technology to provide the necessary training and technical assistance. The implementation of the project will lead to a more effective institution, strengthened through technical collaboration with U.S. technicians and sensitive to the needs and perceptions of villagers. If planned changes are successful, a further and broader result should be an attitudinal change in social forestry programs which could manifest itself in policy directives, new performance standards and requirements for government officials, new training courses or new behavioral patterns. These changes will include both institutional development and policy reform.

B. Forestry Department - Panchayat Agreement: The APAC questioned how the GOM intends to assure that the provisions of the management plan will be legally enforceable in the absence of a contract. USAID/India discussed the use of a contract to ensure enforcement of equity distribution and other concerns with the GOM, and it was decided that this mechanism would not be workable due to difficulties with Indian contract law. Instead, a management plan will set out all rights, obligations, administrative and financial arrangements between the panchayat and the H&SFD, which will be duly signed and executed by both parties. As such, it will constitute a formal agreement between the parties having the

force of law. Nonetheless, USAID/India has emphasized that the key to the success of this project will not be the legal/technical enforceability of the agreement but rather the continued desire of both parties to put the management plan to work. The H&SFD is far more concerned with maintaining and encouraging such positive approaches to the panchayats rather than looking to legal remedies against the panchayat. USAID/India also recognized that if a situation develops that requires the enforcement of remedies, it will essentially mean that the program has failed and enforcement of rights against the panchayat would not really be a solution.

C. Marketing Survey: The APAC supported the need for a survey to analyze market potential of forestry products for off-farm use, which would be updated periodically to determine market demand and alternative markets and to track changes in markets over time. USAID/New Delhi has concurred in the inclusion of the survey in the project.

D. Private Sector: The APAC supported the need for a separate section which has been incorporated into the Project Paper which discusses the role of the private sector in the project. It is recognized that the project places a proper emphasis on private sector concerns. For example, under the plantation development component of the project, approximately 38,000 hectares of trees will be planted on privately owned lands such as land adjacent to farm structures or lands of marginal agricultural value. In addition, 4300 private village nurseries will be established which will produce 65 million seedlings, a significant portion of project production. These nurseries will not only augment the supply of seedlings but will serve also as a focus of institution-building efforts. A primary objective in their establishment is the development of local capability in nursery management as an adjunct to developing overall village capability in plantation management. Employment of a minimum of 4300 persons will also be provided. These two activities are key elements in the involvement of the private sector in the project.

E. FAR Mechanism: FM commends the proposed innovative use of the Fixed Amount Reimbursement (FAR) procedures to finance the establishment of 4300 village plantations. All direct and indirect costs, including staff costs of H&SFD, will be divided equally among the plantations to be established, resulting in a cost of \$12,512 per plantation. AID's contribution to plantation establishment yields a fixed amount of \$5,800 to be reimbursed for each plantation. This sum will be reimbursed in three installments during the establishment and development of each plantation: (1) acceptance by H&SFD and panchayat of the management plan for the village program (\$3,200); (2) completion of all site preparation work and the initial planting of the village block plantation (\$600); and (3) the submission of a comprehensive evaluation of the progress of the plantation, roughly two years after planting (\$2,000). A concern

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was raised that disbursement delays could occur with this mechanism. However, USAID/India does not anticipate that this particular mechanism would result in the buildup of a pipeline. The Mission feels that, if a large pipeline occurs, it would be the result of implementation problems which might occur regardless of the funding mechanism. In any event, USAID/India will be closely monitoring the project for such problems.

F. USAID/India Forestry Staffing: The APAC expressed concern regarding USAID/India's recruitment of necessary forestry expertise to implement the project. In reply, the Mission noted that it will have three foresters on its staff in twelve months. Recruitment of an expatriate direct-hire or PSC and an FSN forester is now in process, and additional forestry expertise is being requested through the Joint Career Corps program. If these recruitment measures are successful, the Bureau's concerns regarding availability of forestry expertise will be satisfied.

G. Distribution of Plantation Produce: A concern was raised that least well-off income groups do not possess sufficient purchasing power to buy firewood, timber, etc. This question was discussed with the GOI, and USAID/India is confident that, in cases when individuals are too poor to pay cash, other forms of payment, e.g., labor, can be worked out.

H. Technical Assistance: The APAC discussed the responsibilities and location of U.S. consultants who will assist in the management and administration of this project and the Madhya Pradesh Social Forestry Project. The APAC determined that Mission plans for use of consultants in both projects are acceptable and pose no legal problem if the proposed arrangements are clearly outlined in the Maharashtra Project Agreement.

V. Congressional Notification

This project was planned for obligation in FY 1983, with life-of-project funding of \$24 million loan and \$1 million grant. The grant portion has been increased to \$5 million to reflect added emphasis on technical collaboration and training, and the loan portion has been increased to \$25 million. The project has been advanced to FY 82 because funding is available this year, and the project is ready to begin. Accordingly, a Congressional Notification was transmitted on August 3, 1982. The waiting period expires August 18, 1982.

VI. FAA Section 612 (b)

When the Development Assistance Program in India was reestablished in FY 1978, the Development Coordinating Committee on December 21, 1977, determined that project local costs could be dollar-financed rather than funded with U.S.-owned excess rupees. Consistent with this policy, the ABS for FY 1982, which included the Maharashtra Social Forestry Project, was reviewed and approved by AID/W, thus confirming the use of dollars for local costs of the project. The provisions of Section FAA 612 (b) have been considered and the use of dollars for local costs of this project can be approved. Your signature on the attached authorization will provide the basis for certification required under this section.

Recommendation: That you sign the attached Project Authorization, approving this project on the basis of the attached Project Paper.

Attachments:

1. Project Authorization
2. Project Paper

Clearances:

PPC/PDPR:JERiksson *[Signature]* Date *7/19/82*

GC:CLvanOrman *[Signature]* Date *7/20/82*

ASIA/PD/SA:KBoyd:fv:8/17/82:X58450

PROJECT AUTHORIZATION

INDIA

Maharashtra Social Forestry
Project No. 386-0478
A.I.D. Loan No. 386-T-231

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Maharashtra Social Forestry Project for India (the "Cooperating Country") involving planned obligations of not to exceed Twenty-Five Million United States Dollars (\$25,000,000) in Loan funds and Five Million United States Dollars (\$5,000,000) in Grant funds over a one year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project.

2. The project is intended to develop the institutional capability of the Maharashtra Horticulture and Social Forestry Department (H&SFD) to assist villagers to manage their communal and private lands for increased and sustained production of forest products through the development, over an eight year project life, of a social forestry extension program that will encompass all 27 rural districts in Maharashtra including 4,300 village panchayats and roughly 6.5 million rural inhabitants. Grant funds will finance training and technical assistance in appropriate technical areas as well as studies related to the project and a resident project coordinator. Loan funds will finance a portion of the costs of establishing 4,300 village forestry programs, and the Cooperating Country will finance the remainder of such costs.

3. The Project Agreement which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms, covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

4. a. Interest Rate and Terms of Repayment

The Cooperating Country shall repay the Loan to A.I.D. in U.S. dollars within forty (40) years from the date of first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall

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pay to A.I.D. in U.S. dollars interest from the date of first disbursement of the Loan at the rate of (a) two percent (2%) per annum during the first ten (10) years, and (b) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Goods and Services

Goods and services financed by A.I.D. under the project with Loan funds shall have their source and origin in the Cooperating Country or in countries included in A.I.D. Geographic Code 941, except as A.I.D. may otherwise agree in writing. Goods and services, except for ocean shipping, financed by A.I.D. under the project with Grant funds shall have their source and origin in the Cooperating Country or the United States, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the project with Grant funds shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

c. Conditions and Covenants

1. Conditions Precedent to Disbursement

(a) Prior to any disbursement of Loan funds under the project, or to the issuance of documentation pursuant to which such disbursement shall be made, the Cooperating Country shall furnish to A.I.D., in form and substance satisfactory to A.I.D., a standard format and written guidelines and procedures for the management plan.

(b) Prior to any disbursement of Grant funds under the project for research activities, other than for a marketing study of forestry products for off-farm use, or to the issuance of documentation pursuant to which such disbursement shall be made, the Cooperating Country shall furnish to A.I.D., in form and substance satisfactory to A.I.D., a detailed plan for the research program to be conducted under the project.

(c) Prior to any disbursement of Grant funds under the project for training activities, or to the issuance of documentation pursuant to which such disbursement shall be made, the Cooperating Country shall furnish to A.I.D., in form and substance satisfactory to A.I.D., a schedule for all training activities under the Grant.

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ii. Covenants

(a) Staffing and budgets will be provided for the H&SFD sufficient to carry out the objectives of the project and to build and maintain an institution capable of sustaining the expansion of social forestry throughout Maharashtra.

(b) Professional forestry and other staff as appropriate assigned to the H&SFD may receive training under the project provided their services are retained for the H&SFD in accordance with applicable Government of India rules governing period of bond following training.

Signature 
M. Peter McPherson
Administrator

26 AUG 1982
Date

Clearance:	Date	Initial
Eugene S. Staples, A/AA/ASIA	<u>4/5/82</u>	<u>ES</u>
John R. Bolton, AA/PPC	<u>8/18/82</u>	<u>JRB</u>
Chandler L. van Orman, CC	<u>8/20/82</u>	<u>COB</u>

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GC/Asia:ST:hp:8/3/82
Ext 28092

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Guidelines for Reimbursement Based on Survival Reports

The final trigger-point in the FAR reimbursement procedure is submission of a survival report at the end of the second year after planting. Reimbursement will be based on stocking levels (number of viable plants at the end of the second year) according to the following guidelines.

A. Government and Community Lands

1. Where stocking levels of 80 percent or more have been achieved, reimbursement will be made upon submittal of the survival report.
2. Where stocking levels are more than 50 percent but less than 80 percent, reimbursement will be made upon submission of the survival report indicating that the reduced stocking level is the result of unavoidable natural causes rather than theft, non-cooperation on the part of the villagers, or mismanagement.
3. Where stocking levels of less than 50 percent are obtained, no reimbursement will be made until a stocking level greater than 50 percent is achieved and the reasons for the initial failure reported.

B. Private Lands

Separate estimates of stocking levels should be made for plantings on private lands and an average stocking level determined for the private participants. Reimbursement will be based on the same stocking criteria as in A. above.

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These guidelines will be reviewed periodically to assure the procedure and criteria are realistic and supportive of overall project goals. AID will rely on the H&SFD Monitoring and Evaluation Unit and the IT Unit personnel for basic information on the success of planting operations, but may verify results on a statistical basis.

Most plantations established during the project will be planted on relatively poor sites where soil fertility, water availability, climate, or all three factors are problems. Past experience indicates that survival rates on such sites are frequently as low as 50 to 60 percent. To improve the survival rates, planting stock will be selected from the more vigorous nursery stock. (About 15 percent of the nursery stock will be discarded). With survival rates of 50-60 percent and replanting in the second year, nominal stocking levels of 80 percent can be expected at the end of the second year. The end of project target is to increase survival rates and achieve stocking levels in excess of 80 percent.

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