Introducing
community forestry
annotated listing of
topics and readings

by Nancy Lee Peluso, Matt Turner

and

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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Forests, trees and people. These basic elements of successful community forestry symbolize an unprecedented programme inaugurated in 1988 by the Food and Agriculture Organization and the Swedish Development Authority. During the period leading up to the inception of this initiative, called the Forests, Trees and People Programme (FTPP), rural development professionals believed that community forestry could be successful. This opinion was based on the positive results of numerous activities and projects worldwide in the previous decade’s Forestry for Local Community Development (FLCD) Programme. However, many questions regarding the development and adaptation of community forestry methods to different scenarios remained.

This is where the FTP Programme comes in. It is designed to diffuse information and knowledge about and ensure increased application of community forestry, dedicating special attention to the unique social, political and economic characteristics of individual communities. Moreover, it requires active participation of local people, with the ultimate goal of empowering them to reap greater benefits from their surrounding trees and forests.

Community forestry has been and continues to be the main way to emphasize the social dimension of forestry and its contribution to the sustainable livelihood of rural people. The subject of community forestry has thus become an important element in core forestry training, since experience shows that forestry without the involvement of the community is unlikely to lead to sustainable development. The inclusion of community forestry topics in forestry training courses serves to enrich the understanding of people-related issues in forestry activities. In working with training institutions, it became apparent to community forestry professionals that these institutions in many countries had difficulties finding reading and reference materials on community forestry. They underlined the need for a reference manual for use in planning and organizing community and other forestry courses, a manual designed specifically to support forestry professionals and instructors at forestry universities and training centres. It should also be useful for governmental forestry departments, non-governmental organizations and project managers in their in-service training.

An integral component of the FTP Programme is the Community Forestry Notes series — an initiative which addresses the problem of informing rural development professionals globally. This note, “Introducing Community Forestry”, constitutes the reference manual which is needed. It proposes a course outline that can be adapted for a variety of audiences ranging from university students (academic courses) to administrators (familiarization courses) to field personnel (familiarization courses and implementation courses). The outline presents eight main topics on subjects such as land and resource tenure which are relevant to all forestry programmes. The publication also contains an extensive listing of useful and informative readings — a valuable reference for forestry instructors. It is hoped that future editions can be developed for Latin America, West Africa and other regions, which will include more local and hence more relevant readings.
Because of their extensive experience in transmitting community forestry techniques to rural development professionals, Louise Fortmann, Nancy Lee Peluso and Matt Turner were commissioned to write this document. Funding for the publication was provided by the multidonor Forests, Trees and People Trust Fund. Within FAO, the FTP Programme is coordinated by Marilyn W. Hoskins, Senior Forestry Officer, Community Forestry.

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This volume can be used by instructors at universities and forestry training centres throughout the world for the preparation of introductory courses on community forestry. It can also be used by researchers and students carrying out research assignments on topics related to community forestry.

The subject of community forestry is a very important complement to core forestry training, since three decades of experience have shown that forestry planning without the involvement of the communities living in the forest areas is unlikely to lead to successful and sustainable development. The direct involvement of local populations and a thorough appreciation of their skills and capacities have proven to be key elements of successful strategies for the development, utilization and conservation of tree and forest resources.

In some cases, this approach is referred to as “social forestry”. In others, the two terms, “community forestry” and “social forestry”, indicate different approaches. In the last thirty years there has been quite some debate over the use of these terms, and not all authors are in agreement. We refer the reader to J. E. M. Arnold’s *Community Forestry: Ten Years in Review* (Bibliographical citation 9), for a discussion of the matter. In the bibliographical citations of the present publication, the original author’s preference has been respected.

This book is divided into three parts. Part 1, “Outline of Topics for Introductory Courses on Community Forestry”, contains a proposed course outline that can be adapted for a variety of audiences ranging from university students (academic courses) to administrators (familiarization courses) to field personnel (familiarization courses and implementation courses). The outline presents eight main topics, each containing: a definition of the general intent; the main points to be covered; and indications for classroom elaboration according to type of audience. Topics and sub-topics are explained, and accompanied by bibliographic references for readings on the subject. These references are intended to provide the instructor with guidance in finding lecture materials and suggestions for reading. For each reference, there are indications regarding regional focus and the intended audience.

Part 2, “Annotated Bibliography”, presents the complete bibliographical citations of the readings on community forestry indicated in Part 1. These readings are suitable as course material, both for the teacher in planning presentations and for the student as part of a course reading list. The full citation for each work is accompanied by a summary description of the content. Details have been preserved where useful to illustrate or exemplify a specific issue (regarding e.g. case studies, reports on experiences, evaluations of projects). The texts are arranged alphabetically by authors’ names; in the case of more than one work by the same author, these are presented chronologically; works by an author jointly with other authors are listed after works he/she wrote separately. Articles written by more than one author are listed under the name that appears first.
The Subject Index offers a further tool for instructors and researchers in the field of community forestry. It offers an alphabetical subject guide to instructors (both in academic settings and in training centres) to facilitate planning course and lesson content, and in selecting readings for students. It can also serve as a bibliographical “data bank” for researchers and course participants with research assignments in those parts of the world where computerized and printed bibliographical aids are not readily available. Through the Subject Index, users can have access not only to the annotations presented in Part 2 of this publication, but also to the articles themselves, where more extensive treatment of the topics can be found.
NOTE TO INSTRUCTORS

Diagnostic questionnaires

Before introducing the topics regarding community forestry, the instructor may want to administer a diagnostic questionnaire to become acquainted with the level of knowledge and preparation of the course participants. The instructor could then exploit the common ground that has been identified and better adapt the course content to the specific needs of participants. Additionally, filling in a questionnaire would raise participant awareness of the major issues regarding community forestry and provide them with a self-assessment of their own strengths and needs.

The questionnaire for any course should aim to meet the specific objectives of the course and should address the specific group of participants. Examples are given below of the types of questions which might be asked in such a questionnaire, with reference to a particular forestry situation known to the participants. It identifies knowledge of very basic concepts, community forestry experience, and the attitudes and observations of those who have worked with local communities:

- Give your own definition of community forestry.
- What are some of the activities involved in community forestry?
- What are some of the constraints to community forestry?
- Name 10 products that villagers get from trees and how they are used.
- Name 5 species commonly used in a village that you know.
- Describe 3 ways villagers manage trees.
- How do women in a village that you know use and manage trees?
- Name 3 non-tree products that villagers get in forests.
- How do poor people in a village that you know use trees, and how does this differ from the way rich people use trees?
- Name 3 ways people hold rights to use a tree and its products.
- What use is knowledge of community forestry to you in your work?
- What has been your role in community forestry?

Audio-Visuals

Although the “Outline of Topics” that follows only includes references to written materials, these should ideally be integrated with films, videos, slide presentations and other audio-visual materials. Participatory activities to create charts, graphs, maps and other visual representations can also be very instructive.
Outline of Topics for Introductory Courses on Community Forestry
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<td><strong>Intent:</strong></td>
<td>To discuss the theory and practice of participatory approaches, underscoring the value of this methodology and showing how the involvement of local people in planning, implementing and assessing forestry activities improves effectiveness, increasing local people’s benefits from forestry development.</td>
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<td>To illustrate how unforeseen events can affect activities; to stress the need for any development initiative to prepare alternative strategies.</td>
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<th><strong>TOPIC VIII</strong></th>
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INTRODUCTION

INTENT:  To briefly introduce community forestry

MAIN POINTS:  Community forestry (often called social forestry) is not limited to tree planting on farms, compounds or roadsides, but also includes shifting cultivation, the use and management of natural forests and the provision of tree products from a variety of sources.

It specifically refers to the promotion of self-help management and use of trees and perennials to sustainably improve the livelihoods of local people, especially the poor, generally using methodologies (called “participatory”) which involve beneficiaries in project design and implementation.

A related concept is agroforestry, which refers to the use of trees with crops and/or animals to increase agricultural output. While not always the case, community forestry usually involves agroforestry techniques and agroforestry is usually developed within a community forestry setting.

CLASSROOM ELABORATION:  In familiarization courses, and possibly also in implementation courses, this topic should be treated very briefly. The idea is simply to set the stage for forthcoming topics.

In academic courses more time could be spent on completing definitions of community forestry and its relationship to other areas of forestry.

SUGGESTED READINGS:  

**general:**

72. Food and Agriculture Organization of the United Nations. 1985. GLOBAL - AB
73. Food and Agriculture Organization of the United Nations. 1978. GLOBAL - A

**additional:**

2. Adhikari, J. 1990. NEPAL - ABD
37. Cecelski, E. 1987. GLOBAL - A
57. Dewees, P.A. 1989. GLOBAL - A
74. Fortmann, L.P. 1988. GLOBAL - AD
101. Hoskins, M. 1982. GLOBAL - AD
158. Romm, J. 1989. ASIA - AB
To stress the importance of analysing who interacts with forests and trees, as well as how this interaction takes place and what forms it takes.

A thorough understanding of this section is absolutely crucial, as it provides the basis for all further issues dealt with in the course.

The analysis of how people use forests must include five types of information, regarding: (1) tree species used and forest products extracted; (2) identification of users of forests and trees; (3) resource management; (4) tenure; and (5) history of forest use, including long and short-term strategies used.

1) What species of trees do people use, and from which specific tree and forest products do they derive benefits (including environmental and agronomic benefits such as nitrogen fixation and improvement of microclimatic conditions)? Do these products serve commercial or subsistence purposes?

2) Who are the people involved in using the forest and trees? How are these users differentiated by gender, income, age, ethnicity, class or caste, religion, etc., and what are the differences in these groups’ use of the resources? (See Topic V for a more detailed treatment of this theme.) The kinds of people who use the forest must be seen in relation to the types of trees and tree products involved; and in terms of their relationship, either competitive or cooperative, with other people. For example:

Women may use certain kinds of trees because the leaves are nutritious and frequently used in cooking, while men may want to cut down the trees to sell the wood, thus creating a conflict of interest.

Poorer people are often dependent on access to certain labour-consuming forest products that better-off villagers do not harvest. However, when such products acquire commercial value, wealthier villagers may try to monopolize harvesting rights.

Note that it is the forester’s responsibility to try to understand why such conflicts arise, how they can be resolved, who benefits and what the impact is on management and use.

3) How do local people manage tree and forest resources? What methods, systems and technologies do they use? What is the importance given to this management activity as compared with other farm activities, and how do forests and trees fit in to the overall rural economy?

It should be determined from which farm operations - including household duties - labour and capital will be diverted if more money and time is required to plant and manage trees. These trade-offs may determine a farmer’s willingness or ability to engage in community forestry.
4) What is the land and tree tenure situation governing the use of these resources? Where can people plant or use trees, and what rules regulate this access? These rules are important because security of tenure will affect the willingness and ability of farmers to make long-term investments. (See Topic VIII)

5) What has been the history of tree and forest use in the community? What are the long-term strategies employed by the community to deal with tree production cycles which span generations (and the inter-generational struggles for control over the management of trees which these cycles may engender)? What are the short-term strategies to deal with seasonal variations?

CLASSROOM ELABORATION:

In familiarization courses, the instructor may wish simply to emphasize why the five factors are important and elicit a few examples from the class.

In implementation courses, the various possible systems and combinations of rules, groups, technologies and tenure should be examined very carefully.

In academic courses, in addition to the above, cross-cultural comparisons could be used to expand discussion on this topic.

SUGGESTED READINGS:

conceptual discussion/agroforestry research:
42. Chambers, R. and Leach, M. 1987. GLOBAL - ABCD
[46.] Charoewatana, T. and Rambo, A.T. 1988. SOUTHEAST ASIA - A
150. Rambo, A.T. 1984. GLOBAL - AD
[152.] Richards, P. 1985. WEST AFRICA - A

tree species and forest products:
5. Alcorn, J.B. 1984. MEXICO - A
[31.] Campbell, B.M. 1987. ZIMBABWE - A
47. Clarke, R. 1992. GLOBAL - AB
63. Falconer, J. 1989. GLOBAL - AB
[65.] Felker, P. 1981. GLOBAL - AD
68. Food and Agriculture Organization of the United Nations. 1990. GLOBAL - ABD
69. Food and Agriculture Organization of the United Nations. 1989. GLOBAL - ABC
100. Hoskins, M. 1990. GLOBAL - ABD
112. Levingston, R. and Zamora, R. 1983. GLOBAL - AD
identification of users of forests and trees:

**general:**
194. Vizarreta, L. 1993. PERU - ABC

**for income categories:**
96. Hartmann, B. and Boyce, J. 1983. BANGLADESH - AD
192. Van der Poel, P. and Van Dijk, H. 1987. INDONESIA - A

**for gender categories:**
[18.] Berger, M. 1989. GLOBAL - ABCD
48. Clarke, R. 1987. GLOBAL - ABC
75. Fortmann, L.P. 1986. AFRICA - AD

**for landholding categories:**
[106.] Jodha, N.S. 1990. INDIA - AD

**resource management:**
60. Dove, M.R. 1983. INDONESIA - A
67. Fonzen, P.F. and Oberholzer, E. 1984. NEPAL - AD
87. Grandstaff, S.W., Grandstaff, T.B., Rathakette, P., Thomas, D.E. and Thomas, J.K. 1985. THAILAND - AD
104. Jain, S. 1990. INDIA - AB
[118.] Menzies, N. 1988. CHINA - AD
120. Messerschmidt, D.A. et al. 1993. GLOBAL - A
121. Michon, G., Mary, F. and Bompad, J. 1986. INDONESIA - AD
122. Miehe, S. 1986. SUDAN - AD
132. Niamir, M. 1990. AFRICA - AB
138. Peluso, N.L. 1993. INDONESIA - A
Outline of Topics for Introductory Courses on Community Forestry

144. Pierce Colfer, C.J. and Dudley, R. 1993. INDONESIA - A
147. Posey, D.A. 1985. BRAZIL - AD
162. Schieffelin, E.L. 1975. PAPUA NEW GUINEA - AD
[173.] Shiva, V. and Bandyopadhyay, J. 1986. INDIA - A

tenure:
30. Bruce, J.W. and Fortmann, L.P. 1989. GLOBAL - AD
76. Fortmann, L.P. 1985 AFRICA - ABCD
199. Wilson, K.B. 1989. ZIMBABWE - A

history of forest use:
for seasonal strategies:
43. Chambers, R. and Longhurst, R. 1986. GLOBAL - AD

for long-term strategies:

for tree and forest history:
[1.] Acharya, H. 1989. NEPAL - AD
[54.] Dean, W. 1987. BRAZIL - A
56. Dewees, P.A. 1993. KENYA - ABC
[92.] Guha, R. 1990. INDIA - A
94. Hafner, J.A. 1990. THAILAND - A
[99.] Heermans, J.G. 1986. NIGER - A
[189.] Tucker, R.P. 1986. INDIA - A
190. Tucker, R.P. 1983. INDIA - A

A = suitable for academic courses; B = suitable for familiarization courses for non-field personnel; C = suitable for familiarization courses for field personnel; D = suitable for implementation courses for field personnel
PARTICIPATORY APPROACHES: THE METHODOLOGY FOR COMMUNITY FORESTRY

INTENT: To discuss the theory and practice of participatory approaches, underscoring the value of this methodology and showing how the involvement of local people in planning, implementing and assessing forestry activities improves effectiveness, increasing local people’s benefits from forestry development.

MAIN POINTS: While traditional approaches to forestry assume that progress depends on professionally trained people imparting their technical knowledge to a select group of rural residents, participatory techniques are designed to elicit people’s own knowledge and expertise and to build on their capacity for effective problem solving and action.

Participatory techniques presume that everyone, local person and professional alike, possesses considerable knowledge, skills and expertise that can be utilized and should be respected.

Note the word “everyone”: the participatory approach, while correcting the traditional view that only the professional has valid technical knowledge, does not make the reverse error and assume that only the local inhabitant has relevant knowledge and skills.

Participatory techniques emphasize process as much as product. Even apparent failures can have some benefits, since the process which leads to the failure often builds capacity for better subsequent problem solving and action.

CLASSROOM ELABORATION: In familiarization courses for policy-makers, this lecture is intended to provide some basic information about participatory techniques, including the rationale for the use of such methods. It is not meant to teach them how to use the methods. However, administrators can gain some basic understanding of the importance and operation of process by participating in a mini-exercise. See Stanley et al. (1983) for a chart with group dynamics, problems and solutions that can be useful.

In implementation courses, the problem solving techniques provided under this topic are best taught as exercises.

In academic courses, in addition to the above, the issues surrounding the use of participatory techniques should be explored, examining theory and experience regarding the efficiency, economy, advantages and shortcomings of this methodology.

SUGGESTED READINGS:

for conceptual papers on participatory development, see:

[4.] Agarwal, B. 1985. ASIA - ABC
85. Goulet, D. 1989. GLOBAL - A
Outline of Topics for Introductory Courses on Community Forestry

90. Grownow, J. 1990. NEPAL - ABD
[151.] Rhoades, R. 1989. GLOBAL - A
179. Stanley, J. 1990. GLOBAL - A
[183.] Suelzer, R. and Sharma, K. 1987. GLOBAL - AD

participatory methods:
29. Bruce, J.W. 1990. GLOBAL - AD
35. Castro, A.P. 1991. KENYA - A
52. Davis-Case, D. 1989. GLOBAL - ABCD
126. Molnar, A. 1989. GLOBAL - AD
163. Scoones, I. 1989. GLOBAL - AD

tools:
49. Conway, G.R. 1989. GLOBAL - AD
51. Davis-Case, D. 1990. GLOBAL - AD
78. Fox, J. 1990. GLOBAL - AD
[164.] Scoones, I. 1988. GLOBAL - AD

case studies:
34. Cashman, K. 1989. NIGERIA - AD
[89.] Griffin, D.M. 1991. NEPAL - A
[99.] Heermans, J.G. 1986. NIGER - A
102. Hyman, E.L. 1983. PHILIPPINES - A
119. Messerschmidt, D.A. 1987. NEPAL - AD
125. Molnar, A. 1990. ASIA - A
127. Molnar, A. 1986. INDIA - A
194. Vizaretta, L. 1993. PERU - ABC

A = suitable for academic courses; B = suitable for familiarization courses for non-field personnel; C = suitable for familiarization courses for field personnel; D = suitable for implementation courses for field personnel
INTRODUCING COMMUNITY FORESTRY

INTENT: To illustrate why it is important for community forestry activities to focus on generating benefits for the local inhabitants.

MAIN POINTS: Students who have successfully completed Topic III will understand that a community forestry project must deliver a variety of benefits (goods and opportunities) to a variety of people. People working in community forestry must try to remove constraints which prevent local people from receiving these benefits from forestry activities.

Countless factors can interfere with the delivery of benefits (see Topics VII and VIII). A person working in community forestry must therefore be absolutely honest with local people in explaining potential constraints to delivery and the opportunities and risks involved. In collaboration with these beneficiaries, the forester must determine which goods the forest can and should deliver under the planned activities: this requires both technical and socio-economic information.

It is important to calculate how quickly the benefits can begin to accrue. This is crucial because villagers must sometimes forego the use of land or forest while the community forestry activity is set up and trees grow. The more quickly a flow of benefits can be established, the greater the chance for success.

CLASSROOM ELABORATION: Familiarization courses may wish to focus on the range of supports and constraints to delivery of timely benefits - forest policy, community leadership, market access and inter-community relations.

In implementation courses, more emphasis could be placed on communicating risks to communities and ways to mitigate external and community constraints to timely benefit delivery.

SUGGESTED READINGS:

56. Dewees, P.A. 1993. KENYA - ABC
80. French, D. 1986. MALAWI - AB
95. Hafner, J.A. and Apichatvullop, Y. 1990. THAILAND - ABCD
104. Jain, S. 1988. INDIA - AB
133. Ogden, C. 1991. GLOBAL - ABCD
160. Romm, J. 1980. INDIA - A
166. Shah, T. 1989. INDIA - A
DIFFERENCES AND RELATIONSHIPS AMONG USERS: TAILORING ACTIVITIES TO MEET LOCAL NEEDS

INTENT: To illustrate the differences and relationships among users of forest and tree resources, and demonstrate that an understanding of these inter-relationships is critical to the community forestry field worker and researcher.

MAIN POINTS: Rather than viewing communities as uniform entities, community forestry is concerned with identifying levels of differentiation within and between communities, in order to address the needs and potentials of each group appropriately. In this context, there are several key categories for examining social and economic differences: gender, income levels, age, ethnicity, class or caste, religion, cultural traditions regarding resource use, etc.

In community forestry, it is essential to understand how people in different groups use forests and trees, and the nature of the relationships between groups as well as between individuals within a group.

It is also important to learn the origins of local preferences for use of specific trees, how use of the tree is negotiated between user groups and the impact of the resulting agreement on the actual exploitation of the resource.

Beyond the communities themselves, other groups at regional, national and international levels (sometimes called “stakeholders” in the exploitation of the resource, since each has a particular interest, or “stake,” in the products of the resource) also have an impact on local people’s access to forests and trees. The relationships of local residents with these external actors are subject to many types of conflicts, which need to be explored, analysed and understood by the community forestry worker.

Examples of stakeholders other than the local population include: local and international non-governmental organizations; bilateral and multilateral donors; multinational companies (timber, plantation management, construction, pharmaceutical, livestock production, etc.) and other investors; agribusiness; local, national and international politicians; and various government ministries responsible for resource management with control over the same or overlapping territories.

These stakeholders have different degrees of power or enforcement capacity as they contend for the same resource. The different ways in which the groups intend to use the resource often have potentially very different effects on the resource itself and on the competing user groups. For example:

National goals for revenue generation from forests may conflict with local peoples’ interest in maintaining and using standing forests.

Local peoples’ interest in selective harvesting of timber or non-timber forest products, hunting forest game, or working for a large company may conflict with environmentalists’ intentions to establish nature reserves.
Classroom Elaboration: All courses should enable participants to identify socio-economic differentiation and inter-relationships within and among communities. Role plays and case studies can be extremely useful to analyse potential conflicts.

Implementation courses can go into greater depth on different strategies for the analysis of relationships and resolution of conflicts using, for example, case studies to highlight culture-based difference and various approaches. Here as well, role plays can be especially helpful to implementors for devising methods for identifying specific differences and managing conflicts.

Suggested Readings:

**Conceptual/Analytical Papers:**
- 3. Agarwal, B. 1989. INDIA - A
- 20. Berry, S. 1989. WEST AFRICA - A
- [86.] Gow, D.D. and Morss, E.R. 1981. GLOBAL - A
- [117.] McKee, R. 1989. GLOBAL - A
- 133. Ogden, C. 1991. GLOBAL - ABCD
- 139. Peluso, N.L. 1990. INDONESIA - A
- 149. Raintree, J.B. 1991. GLOBAL - AB
- 175. Shiva, V., Sharatchandra, H.C. and Bandyopadhyay, J. 1982. INDIA - AD

**Case Studies:**
- 38. Cernea, M. 1981. PAKISTAN - A
- 77. Fortmann, L.P. and Bruce, J. W. 1988. BANGLADESH - AD
- [99.] Heermans, J.G. 1986. NIGER - A
- 102. Hyman, E.L. 1983. PHILIPPINES - A
- 113. Mahiti Team. 1983. INDIA - AD
ORGANIZATIONAL STRUCTURE OF THE FORESTER'S AGENCY: EFFECTS ON THE POTENTIAL OF COMMUNITY FORESTRY

INTENT: To identify and analyse the types of organizational structures within which the professional must work and the impact of these structures and conditions on the professional’s effectiveness in community forestry work.

MAIN POINTS: It is necessary to understand the nature of bureaucratic organizations in order to identify their strong points and weaknesses in operationalizing their goals. Administrative bottlenecks can destroy the effectiveness of the most well-designed programme and impair the productivity of the most competent professional.

Factors affecting the professional’s effectiveness in performing his/her job within the organization include:

1) the facility with which ideas can be circulated, discussed and applied or rejected in the organization; and

2) the professional’s hierarchical position within that organization: how much power he/she has to implement his/her ideas. This is determined by hierarchical characteristics of the organization, such as

   a) the chain of command within the agency and the way in which inputs are integrated from the bottom of the chain to the top; and

   b) the chain of command between the agency and other administrative bodies and the integration of inputs from the outside of the agency to the inside.

CLASSROOM ELABORATION: Again, role plays are useful for this topic.

Courses for administrators will want to fully explore management style and organizational issues and their impacts on staff initiative and commitment, and project management and success.

All courses should look at balancing goals within the forest service as well as between communities and the forest service, and should discuss the need for flexibility.

SUGGESTED READINGS: conceptual/analytic papers:

108. Kaufman, H. 1960. USA - A
[129.] Moris, J. 1981. GLOBAL - ABD
170. Shepherd, G. 1986. GLOBAL - A

A = suitable for academic courses; B = suitable for familiarization courses for non-field personnel; C = suitable for familiarization courses for field personnel; D = suitable for implementation courses for field personnel
172. Sherman, N. 1987. GLOBAL - A
185. Thompson, J.T. 1992. GLOBAL - AB

case studies:
[40.] Chambers, R. 1974. KENYA - A
161. Sarin, S. 1980. INDIA - A
177. Sitaraman, S. and Sarin, S. 1980. INDIA - A
188. Trosper, R.L. 1989. USA - A
PLANNING FOR CONTINGENCIES:
THE NEED FOR ALTERNATIVE STRATEGIES

INTENT: To illustrate how unforeseen events can affect activities; to stress the need for any development initiative to prepare alternative strategies.

MAIN POINTS: It would be a mistake to assume that understanding the local ecosystem and social structure and eliciting local cooperation are sufficient for the success of a community forestry project. Uncontrollable outside events can easily ruin such an initiative, as in the following illustrative examples:

- The market for building poles takes a sudden downward turn and a community plantation becomes worthless.
- A certain forest product becomes very popular and outside investors move in to take over control of the local resource.
- In a government campaign aimed at forcing separatists out of hiding, the army burns down the local forest.
- Under pressure from environmental activists trying to save an obscure species of animal, the government outlaws not only clear-cutting of the forest, but all forest access, including extraction of non-timber forest products important to local communities.

CLASSROOM ELABORATION: In all courses, the challenge will be to get the participants to think about alternative strategies and ways to be flexible, adaptable and effective in the face of contingencies and change. Case studies showing examples of types of changes or participants’ experience in dealing with unforeseen events can encourage recognition and anticipation of these events through flexible planning.

SUGGESTED READINGS:

19.[ Bergeret, A. and Ribot, J. 1990. SENEGAL - A
23. Blaikie, P. 1981. GLOBAL - A
24. Blair, H.W. 1986. INDIA - AD
80.[ French, D. 1986. MALAWI - AB
84. Garland, E.B. 1987. PERU - A
97. Hecht, S.B. 1985. BRAZIL - A
105. Jain, S. 1984. INDIA - AD
123. Moench, M. 1991. INDIA - A
134. Ogden, C. 1990. GLOBAL - ABD
137.[ Pandey, S. and Yadama, G.N. 1990. NEPAL - A

A = suitable for academic courses; B = suitable for familiarization courses for non-field personnel; C = suitable for familiarization courses for field personnel; D = suitable for implementation courses for field personnel
140. Peluso, N.L. 1983. INDONESIA - A
165. Selvarathnam, J. 1985. INDIA - AD
171. Shepherd, G. 1985. GLOBAL - AD
176. Singh, K. and Bhattacharjee, S. 1991. INDIA - A
CONSIDERING LOCAL LAND AND RESOURCE TENURE CONSTRAINTS IN PLANNING AND IMPLEMENTATION

INTENT: To illustrate the importance of local claims on valuable resources, and underscore the threats these claims may be subject to; to consider how local claims can be reinforced.

MAIN POINTS: There are many kinds of threats to local residents’ claims on valuable resources (in particular, their land and tree tenure situation). These can come from neighbours or other village insiders, from outsiders claiming more important or “noble” ends for local resources, or from government officials trying to regulate access to the resources villagers have managed for generations.

These outside actors may not see themselves as threats. From their perspectives they are engaged in rational pursuits. Whether they succeed depends to a certain degree on the security of local peoples’ claims to the resources around them.

Security of claim, or tenure, depends mainly on two factors: (a) whether all parties believe in the same set of guidelines to determine who has the rights to control a particular resource; and (b) the degree to which established rights can be enforced.

Both these factors require a common set of laws and a common willingness to adhere to or enforce them. Otherwise, as is often the case, the more powerful group will exert authority.

One of the main goals of a community forestry programme is to secure local people’s claims to forests and trees. It is critical that the rules giving local people control or access to these resources be established in a form recognized by the state. This generally means that some type of formal land and tree tenure law must express the nature of ownership (common or individual), the rules of access or use and the sanctions applied if the rules are broken. Since most communities have insufficient power to enforce their claims, particularly in the presence of powerful external claimants, it is also critical that the state should back up its tenure laws with its own enforcement power.

CLASSROOM ELABORATION: Classroom exercises such as games or role plays will help convey how insecurity of tenure will affect interest in investing in resource improvement and management. They can show some of the conflict which different beliefs about rights or access can create.

In familiarization courses, the emphasis can be on the fact that security or insecurity of tenure will influence local interest in community forestry and should therefore be examined.

In implementation and academic courses, an analysis should be made of the impact of various types of tenure situations on specific community forestry activities. An effort should be made to understand the kinds of activities that might or might not be possible given specific tenure constraints. Failure and success case studies can be reviewed to point out the influence of different tenure arrangements on community forestry activities and alternatives for coping with and adapting to limitations.
SUGGESTED READINGS:

[4.] Agarwal, B. 1985. ASIA - ABC
[28.] Bromley, D.W. 1989. GLOBAL - A
42. Chambers, R. and Leach, M. 1987. GLOBAL - ABCD
60. Dove, M.R. 1983. INDONESIA - A
88. Grasmick, J. 1988. SOUTH AMERICA - A
120. Messerschmidt, D. A. *et al.* 1993. GLOBAL - A
138. Peluso, N.L. 1993. INDONESIA - A
159. Romm, J. 1981. INDIA - A
182. Subedi, B.P., Das, C.L. and Messerschmidt, D.A. 1993. NEPAL - A
[186.] Thomson, J.T. 1983. SAHEL - AD
Annotated bibliography
NOTE TO READERS

This section presents the complete bibliographical citations of the readings on community forestry indicated in Part 1. These readings are suitable as course material, both for the teacher in planning presentations and for the student as part of a course reading list. The full citation for each work is accompanied by a summary description of the content. Details have been preserved where useful to illustrate or exemplify a specific issue (regarding e.g. case studies, reports on experiences, evaluations of projects). The texts are arranged alphabetically by authors’ names; in the case of more than one work by the same author, these are presented chronologically; works by an author jointly with other authors are listed after works he/she wrote separately. Articles written by more than one author are listed under the name that appears first.

NOTE ON AVAILABILITY OF PUBLICATIONS

In Part 2, Annotated Bibliography, the citations are numbered. Unless the number appears in square brackets, copyright permission to reproduce the works in full has been obtained by the Community Forestry Unit of the Forestry Department, FAO. Upon request copies of works can be provided by the regional facilitators of FAO’s Forests, Trees and People Programme in all major regions of the world.
ANNOTATED BIBLIOGRAPHY


This article describes the importance of forest and pasture resources in the production systems practiced by Jirel farmers living in and around the Jiri River valley in the Dolakha District of Nepal. It first traces the political history of the region as it was related to forest/land management. Despite significant changes since 1957 in state policy towards forests, these changes had little impact on the forest management practices of Jirel farmers. The Jirel partition the ground and trees of their forest commons separately. They usually hold the forest-ground jointly but divide (among households) the fodder trees by number, species, age and size. For non-fodder trees, joint ownership is the dominant pattern. Thus three different types of resources can be identified: ground, fodder trees and non-fodder trees.

The author discusses the conception of joint ownership of forest/pasture grounds, which provides checks and balances to prevent overharvesting. This is followed by considerations on the usufruct rights that help Jirel households meet their needs for fodder and wood despite existing inequalities in ownership rights (property rights are not rigid, undivided, inaccessible or exclusive; in winter, pastures are open for communal use; pastures can be rented for only part of a season, etc.).

The article also describes tenure/usufruct systems in other nearby towns.


This article reviews forest management policies in Nepal both in the historical past and present. These policies are assessed for their effectiveness in achieving conservation and management objectives. Despite significant policy shifts, Adhikari suggests that the most recent policy formulations are strikingly similar to the traditional ones of more than a century ago.

Shortly after the formation of Nepal’s modern government in 1951, the forest resources of the country were nationalized. By the late 1970s it was apparent that ownership and local control of land were important for conservation. Over the next decade, greater control was placed in the hands of local governing bodies or panchayats. These forests - either Panchayat Forests or Panchayat Protected Forests - are similar to traditional community forests known as sanad forests, thus bringing current management back to the approach used many decades ago. The author concludes that failure to recognize the importance of the traditional management system cost a great deal.

Agarwal argues that women not only bear the burden of significant responsibility for family subsistence, but that they are also subject to growing constraints on the limited resources and means at their command. The first four sections of this book are concerned with gender inequalities: in the distribution of food and health care, in access to employment activities, in the unequal and declining access to land and in absorbing the burden of ecological decline. Section five examines women’s responses to gender inequality at the grassroots level and section six an alternative development path.

The author discusses the emergence of a large number of grassroots, non-party initiatives in the 1970s, around issues such as land, wages, upper-caste oppression and ecology; she points out that in many of these groups, gender issues took on prime importance, and that in many situations separate women’s groups came to be formed.

Based on her study of initiatives organized by and for women, the author concludes that women’s militancy is much more closely linked to family survival issues than is men’s; that the economic conditions of women are directly linked to social and cultural forms of subordination; and that their struggle “is not just for bread but also for human dignity” (pg. 61).


This text analyses the high failure rates of community forestry projects. It cites examples of active and passive forms of resistance and criticizes the approaches taken by forestry departments that tend to exclude local people from project decision-making. Agarwal traces the failure of a number of “social forestry” projects to the absence of villager involvement in species selection. He goes on to consider gender differences in the perceived need for cash crops and fuel/fibre subsistence trees. He describes the experience associated with the Chipko Movement in India, giving attention to the reaction to commercial exploitation of forests as well as to gender-based differences in perceived needs. In discussing other successful projects, he argues in favour of local participation in general, and women’s participation in particular. He further cites success of China’s and South Korea’s (Saemaul Movement) reforestation efforts. He concludes that for most developing countries, community involvement is likely to be extremely difficult without redistributive land reform.


Alcorn describes the Huastec forest management system of secondary successional forest tracts on the eastern slope of the Sierra Madre Oriental in
northeastern Mexico. These tracts are managed on a more or less long-term basis with differential removal of “weed” plants and planting of some useful primary species. Alcorn provides a list of the large number of species utilized by the Huastec from this system for commercial and subsistence needs. The author argues for the use of this management model for future forest development and management elsewhere in the tropics.


This report summarizes the results of an FAO-assisted forest rehabilitation project carried out in Northeast Thailand. The report is organized into four chapters, the first of which provides a background for the project, including a review of the tasks undertaken and the policy considerations assessed. Chapter 2 describes the base line conditions in the project area, including farming systems, settlement patterns and the socio-cultural characteristics of the population. The third chapter reports on the process of implementing the programme, beginning with the need for infrastructure development and resettlement of forest encroachers into villages. The final chapter evaluates the impacts and lessons learned from the project. Most important among these lessons was the recognition that obstacles were created by the top-down nature of the plan necessitating a public relations campaign to build the trust of local people and the need for flexibility in management style.


At the outset of the colonial period, the Lembus Forest of southeast Kenya was awarded to a commercial company. This article traces the history of the forest, focusing on the continued struggle over control of this resource involving the company (which wanted to exploit the forest without any interference), different African groups (which wanted to continue to use the forest resources), and the colonial state (which sought to control and conserve the forest for longer-term exploitation).


Following a brief geographical introduction to the area, Anderson describes the status of upland forests in the Philippines and the processes influencing them. The author examines the interactions of certain particularly vulnerable populations with their environment and the external forces which have reshaped this interaction. Major factors identified which lead to resource and social decline in these areas include: various government actions and socio-economic changes which have acted to push and pull migrants into the upland forests for commercial or subsistence reasons; and government
decrees in response to commercial interests, which very much weaken or
over-turn indigenous land tenure systems. These factors and others have in
turn led to population decline (epidemic- and poverty-induced), sedentariza-
tion, loss of autonomy and deculturation of native peoples whose lands have
been directly or indirectly (degradation) expropriated. The Philippines case
provides insights into the general problem of incorporating ‘marginal’
resources and people into the economic and political structure of their
nation.

munity Forestry Note 7, revised edition. Rome: Food and Agriculture Orga-
nization. vii + 32 pgs.

This review brings together and synthesizes what has been learned about
community forestry over the past ten years. It focuses on the main theses
and findings that have been advanced. The document reviews the reasons
why the concern with community forestry arose when it did, the original for-
mulation of the problems and what was perceived to be needed at that time.
It also outlines the main issues that emerged as projects and programmes
took shape.

By the mid 1970s it had become apparent that through development strate-
gies narrowly based on industrialization, few countries had attained signifi-
cant, sustained growth and that the growth achieved all too often related
poorly to people’s actual needs. Furthermore, the energy crisis and the Sahe-
lian drought drew attention to rural people’s dependence on fuelwood and
other tree products; and drought in Africa and flooding in Asia underlined
the impacts of deforestation and degradation of tree cover. Mounting con-
cern over these overlapping problems led to a number of initiatives, at both
the national and international level, designed to meet rural needs for fuel-
wood and other forest products in a more sustainable manner. FAO with
support from SIDA, organized a series of meetings to review existing expe-
riences and to define what was needed. Initiatives regarding village wood-
lots in South Korea, social forestry in India, forest villages in Thailand and
village afforestation in Tanzania and elsewhere were taken into considera-
tion. The early 1980s saw the birth of the first generation of projects which
focused mainly on creating new village-level resources to meet local subsis-
tence needs through afforestation. By the mid and late 1980s, accumulating
experience from projects and research identified the importance of the eco-
nomic dimension to farmer and communal decisions, and of forests and
trees as sources of food, income, employment and household security. A
second generation of projects began, which emphasized local control and
management of existing forest land resources, and the multiple role of trees
in farming systems. A new emphasis was placed on working through local
institutions.

In this report, Arnold summarizes what is now known about the ways rural
people actually use and depend upon trees. In this regard, he discusses their
dependency on forests and trees for fuelwood, food, livestock feed and soil
nutrients, and cash income. He discusses the consequences of a diminution
or degradation of tree resource on rural inhabitants, and the implications of
this enhanced understanding for intervention and support strategies. He goes on to review the state of knowledge about how local people can best organize to manage and use trees and tree products. The report concludes by summarizing the main lessons that emerge, and focuses on the implications for further improving the support that governments and aid agencies seek to provide to community forestry. Here the author clarifies the meaning of the term “community forestry” in the present-day context as “an umbrella term denoting a wide range of activities which link rural people with forests and trees, and the products and benefits to be derived from them. If there is one dimension to be stressed above others it is the range and diversity of these linkages, and the span of different disciplines which are engaged in aspects of community forestry. Community forestry is therefore not a separate discipline, or even programme, but one dimension of forestry, agriculture, rural energy and other components of rural development” (pg. 25).

In his text, the author also discusses the term “social forestry” which is used by some as interchangeable with community forestry and by others to describe an implicitly narrower spectrum of activities surrounding the fuelwood/deforestation/wood-lot issue. He traces the term to a 1976 report of the National Commission of Agriculture in India, in which it was used for a programme of activities to encourage those who depended on fuelwood and other forest products to produce their own supplies. He points out that many people assume from the label “social” that the term refers to activities that have a predominantly welfare function, and suggests that for this reason the term “social” forestry is inappropriate for activities designed to help people benefit from forests and trees, in the sense that it has contributed notably to the misconceptions and misunderstandings which surrounded the early years of community forestry.


This article summarizes the most important lessons to emerge from evaluation of one aspect - farm forestry - of a social forestry programme carried out in three states in India: Tamil Nadu, Orissa and Bihar. The main findings from the study were that farmers can and will grow trees though generally for economic reasons; markets must be available if projects encouraging tree cash crops are to be successful; the poorest farmers benefit most from multipurpose trees; and that better communication with farmers could be achieved with recording, monitoring and evaluation methods which provide timely and pertinent information to managers enabling them to make any necessary adjustments to the programme.


This monograph outlines the trends in the use of and reliance on forest products, the role of common property resources (CPRs) as a source and the increasing importance of agroforestry systems in rural household
economies. The author argues that with the degradation of forest resources, their privatization, encroachment and state expropriation, the products of agroforestry are becoming increasingly important as critical complements to on-farm resources, replacing forest CPRs.

Three types of uses for forest products are reviewed: direct use by the household (i.e. fuel or food); as inputs to farming (i.e. fodder or mulch); and as sources of employment and income. Although forests may only play a supplemental role in each of these categories, this capacity may be the key component to survival of the household. For example, foods from forests may be critical during some seasons or during times of drought as famine foods. Employment and income derived from forest resources may also be supplemental to other economic activities, such as the gathering of seasonally available products for sale or the occasional selling of firewood during periods of poor agricultural conditions.

With the disappearance and degradation of CPRs, many farmers have attempted to secure their access to forest or tree resources either by directly integrating trees into their farms, planting or protecting them. An increase in the commoditization of fuelwood has also accelerated this trend. However, in some cases changes in agricultural land use, production system or technology may result in the diminution or elimination of trees from farms. The paper concludes by presenting a number of implications these trends have for forest policy. Prominent among them are suggestions concerning interventions which support collective management, less emphasis on the establishment of new resources and greater emphasis on the sustainable use of existing stocks in CPRs and on farms, and economic and legal measures which support local production rather than undermine it.


This article examines the role that trees play in the farm economic system and the various conditions under which farmers are willing to incorporate them into their production strategy. These topics are examined in case studies representing three different farming regimes: low-intensity, with extensive use of land; intensive, highly developed homegardens; and trees grown as cash crops in farm wood-lots.

Under conditions of pressure on low-intensity farming systems (such as shifting cultivation) the author suggests that intensification takes place in a roughly sequential process, with first steps often involving increased investment of labour and occasionally capital (i.e. through use of herbicides or pesticides) and less emphasis on decreased tree cultivation. Inter- and alley cropping are important forms of more intensified land use which lend themselves to incorporation in this system.

Homegardens are typified by mixed plantings of annual and perennial species. Traditionally, they are used to supplement the food and income derived from other parts of the farm. As landholding size declines and population pressure increases, farmers are frequently forced to find income-gen-
erating employment off the farm. In such instances, tree and other perennials may figure more prominently in gardens because of low labour requirements.

Farm wood-lots contain trees grown as cash crops. Although the author notes that planting patterns vary considerably, as pressure to intensify increases, there is a tendency to move toward multipurpose tree species - those which can provide more than just fuelwood and construction timber - and toward intercropping.

An important motivation for farmers to cultivate trees in all three instances is their relatively low labour requirement. Although it is often assumed that only wealthier farmers are interested in tree cultivation, this article points out that poor farmers’ resources may not cover their basic subsistence needs, forcing them to seek more income, including that deriving from tree cultivation.


This paper examines some existing agroforestry practices (homegardens, farmlots, shifting cultivation, and alley cropping) in an attempt to identify the economic considerations that have caused farmers to adopt them. It identifies four overlapping farmer strategies involving the adoption of agroforestry practices by farmers: use of trees to maintain productivity of land through fertilizer/herbicide substitution or soil/crop protection; use of trees to make productive use of land when capital and labour resources are scarce; use of trees to increase usable biomass per unit land where land and capital are limited; and use of tree/crop/livestock combinations which, compared to alternative uses of the land, provides a fuller use of available labour. This last strategy serves a dual purpose: to increase income-earning opportunities (at low labour cost) as farm size falls below the level at which household subsistence can be obtained (the author notes that the growth in agroforestry in many situations is in response to production for cash rather than subsistence); and to diversify the seasonal production and type of outputs to manage climatic and market risk.


This brief article describes the importance of the small forest-product processing enterprises in terms of total employment, economic output, and centers of continued economic growth in less developed countries. The authors argue that small enterprises allow for greater siting flexibility, a useful characteristic given the often widely scattered nature of forest-product processing and which can often be as efficient as its larger-scale counterparts. The authors go on to describe the problems which the small processor faces and suggest programmes/policies which would improve the situation of these small enterprises.
This report summarizes current understanding of common property resource (CPR) management in India, focusing particular attention on forest resources and forest products, and drawing on both published and unpublished materials. The monograph is organized into seven chapters — one introductory chapter, one concluding chapter and five chapters reviewing specific aspects of CPR, land tenure, land use and agriculture, analyses of contemporary CPR management regimes, and the use of social forestry to guide CPR use and management. Three lengthy indices document numerous aspects of the legal rights and privileges involved in CPR use, the institutional rules of several communal management systems, and several case studies of co-management between villagers and forestry departments.

The authors point out that although uncultivated lands used as CPRs in India have been severely reduced through privatization and increased central government control, those which remain are nonetheless very important. These CPRs serve a multi-fold purpose: they fill gaps in resource and income flows, provide complementary inputs into the rest of the agricultural system, and are frequently a critical source of support to the poorest members of the community at the times of greatest vulnerability. However, the role and significance of CPRs varies by agro-ecological region.

Four reasons for maintaining the CPRs identified by the authors are: their integration with other aspects of the agricultural system, their role in providing critical resources to the poorest community members, the advantages offered by group management or economies of scale to some types of land use (i.e. wood-lots, or fodder farms) and the management skills and village institutions which CPRs help preserve.

Three major institutional requirements appear to be necessary for the perpetuation of genuine communal management of CPRs. They are: conditions of secure land tenure; locally generated and enforced use regulations; and development of and reinvestment in the CPR.

The author argues in favour of participatory research, criticizing the proliferation of diagnostic research methodologies which resulted from the need to understand why farmers preferred certain technical packages being offered them by extension services. She then goes on to describe a participatory research experience involving on-the-farm varietal trials of beans and cassava. The research was structured to involve and support the initiative of farmers. As much as possible, survey-type research was avoided; instead situations were created which encouraged farmers to express their own criteria for choosing different varieties. Farmer participants were those identified by the community as having the most knowledge concerning bean or cassava.
cultivation. Seeds/samples were brought to the villages and varieties grown on test plots chosen by villagers based on visual inspection. The author points out that in the case of beans, there was a gender divergence in choice: women chose seeds that resembled good tasting local varieties and men chose according to the size of the bean.

Varietal trials were then performed in farmers’ fields. The researchers’ interest in the opinions of farmers about the different varieties and about cultural practices created significant interaction. Management decisions in these test plots were determined and carried out independently by each farmer.

The author notes the importance of stressing from the outset that the researchers’ goal is to test - and not to demonstrate - varietal performance; she further notes the importance of creating a relationship with farmers where frank and open communication about the performance of new technology in their fields is possible. By making a point of having the farmers show them around the trial, the research staff is able to assess how seriously the farmer takes the trial.

Techniques for recording preference evaluations are also given, where the author points out that “the group process ... in which farmers interacted as much among themselves as with research staff, ...was catalytic in motivating the farmers to undertake selections and to reject confidently a high proportion of the material included in the trial” (pg. 19).


This paper reviews a forestry project undertaken jointly by the FAO and the Peruvian government. Since its beginning in 1982, the project has developed a system termed ‘Communal Forestry Development’ (CFD). The general aim of the project is to “promote forestry activities which will contribute to the development of rural communities in the Peruvian Andes” (pg. 177). This is accomplished by focusing efforts on strengthening local knowledge and management through forestry projects.

At the local level, the objective is to integrate forestry into existing land use patterns. The CFD provides technical assistance with, for example, seedling production, and with the establishment and management of tree plantations. And in an attempt to foster management capabilities in the community, it elaborates an agreement regarding how the community and project personnel will work together. This agreement is referred to as the ‘terms of cooperation’. In the initial stage, the CFD approaches local governments with a standard or ‘institutional’ plan. If both parties agree to a set of terms of cooperation, they then work together to adapt the institutional plan into a concrete work plan that addresses local issues.

During the course of the first year, training is given to local participants continuously. At the close of this phase, the project staff and community mem-
bers jointly evaluate the results and apply this knowledge to the formulation of a new plan for the following year. The author notes that as experience and capacities grow within the community, along with interest and participation, the role of the project extension worker diminishes until the community takes full charge of the project.

The author argues that the major lesson to come out of this project is that development schemes must not try to get community members to participate in their projects, but rather must try to develop projects that participate in local realities. She notes that local people have a planning process of their own: "The local population already decide, realize, benefit from and evaluate their land use activities" (pg. 86). The challenge for development is then to find ways to contribute to these efforts.


Berger describes a study on the impact of an NGO micro-enterprise credit scheme which confirms previous findings of moderate impacts from credit: micro-enterprise credit projects tend to preserve rather than create jobs; they tend to stabilize, rather than increase income. The author goes on to discuss issues concerning women’s demand for and use of credit: women’s complex patterns of time use; overlapping of household and business, and the consequent difficulty of ensuring that credit be used for purely “productive” purposes; the difficulty of measuring the impact on women’s incomes; the risk that credit for women’s businesses be used to fund consumption or the economic activities of their husbands. She concludes that women need very flexible credit programmes, and argues in favour of projects utilizing the solidarity group mechanism (borrowers are organized in groups of about five to eight, members guarantee each other’s loans).


This book is concerned with the importance of tree products in peasant subsistence strategies in a Sudanian zone in Senegal, how the urban charcoal market has greatly reduced forest cover, and how species diversity has negatively affected rural communities.

20. **Berry, S. 1989.** “Social institutions and access to resources” in *Africa*, vol. 59, no. 1, pgs. 41-55.

This article reviews and analyses the ways in which farmers invest in social relations and institutions to maintain and/or gain access to productive resources, and how these institutions have shaped strategies of agricultural production and investment. In addition, the author explores how the growing economic, political and ecological instability has reinforced or altered previous patterns of resource access and use.

Berry argues that in areas where tree and land tenure rights are separable, rights to tree farms have multiplied over time (through inheritance, tenancy, pledging, and some labour arrangements). He further notes that control over tree crops and their proceeds does not depend as much on formal rules of access and transfer as on interactions taking place over a period of time among potential rightholders. Where written records are scarce, disputes are often settled by the reputations and power of witnesses and disputers.

The author gives an historic account of the multiplication of tenure claims to crop trees in the forest belt of West Africa. During the colonial period, “indirect rule” tended to increase the rules and channels through which to establish and defend tenure rights to trees; property rights were established mainly through an on-going process of negotiation and renegotiation. The property rights of the seller of the trees might be disputed, so that a large number of claims might be negotiated over time regarding an initial transaction. The proliferation of rights has been reinforced by immigration which has led to numerous cases of tenancy, and by labour contracts which have led to claims to land and trees by migrant labourers. The acquisition of rights by migrants depends more on changing economic and political conditions than on the original terms of the labour contract.

The general principle that trees belong to the planter was extended to include those who invested their labour in maintaining the trees (farm labourers), especially if it is held that they were not otherwise fully compensated for their labour (e.g. family labourers not working for a wage). These claims do not supersede, but coexist with those of the planter or his/her heirs.

The decline in claims to trees by women is viewed as due to “restrictions on women’s access to the right to plant permanent crops [on land controlled by male members of their own or their husband’s descent groups]; limitations on women’s ability to mobilize labour [their own as well as the labour of others]; and women’s inability to assert their claims vis-à-vis those of men in cases of disputed rights to particular farms” (pg. 12).


The authors present the findings of a pilot survey conducted in two villages in Karnataka, India (preliminary to a larger field survey of eight villages). This survey aimed to evaluate the differential impacts of the evolving energy situation (defined in its broadest sense to include food, fuel, fodder, fertiliser) on the rural middle class, small peasant class, and the wage labour class (defined according to labour, physical and monetary assets, indebtedness and caste characteristics). The researchers looked at the physical quantities of the energy produced and consumed; the absolute and relative labour time spent...
in obtaining this energy; and the absolute and relative amount of cash income spent and gained by selling energy. Their work shows that there are large class differences: the rural middle class is not subject to an energy crisis, the small peasant class is constantly on the edge of an energy crisis, and the wage labour class suffers from a chronic and unremitting energy crisis.


Blaikie describes his conceptual framework for analysing ecology-society interactions. Noting the diversity of geographical and historical factors contributing to ecological degradation (or soil erosion), he points out the need to carry out part of the analysis on a specific piece of land. He also points out, however, that the productive activities that relate people to local environment must be analysed within a broader economic and social context, with explicit treatment of the role of the state. Blaikie’s analysis focuses on the “individual decision-making unit” (a household, clan, village, etc.) with a definable set of assets and income opportunities, on the basis of which the unit decides on a particular set of productive strategies. Changes in assets, income opportunities or the decision-making process will often lead to changes in productive strategies; thus “outside” factors affecting these intermediate factors can lead in turn to changes in how the local community interacts with its environment.


In this article, Blair begins by noting that India’s Social Forestry programme has failed to dramatically improve the rural fuelwood situation, which is one of its stated goals. However, he adds, the rapid growth of planted area, particularly in the farm forestry sector, suggests that (male) farmers, although having different goals from those originally envisioned by the programme, have found it useful to pursue their more commercial interest, which is to market poles and small timber.

Many of the mistaken projections of the programme are due to a lack of understanding of rural producers’ views regarding their own problems. The author presents data showing that rich and poor households depend, in like proportion, on three fuel sources (wood, dung, and crop wastes). He notes that the persistence of a significant proportion for dung used even in rich households (allows slow cooking) suggests that people will not stop using dung completely if and when more fuelwood becomes available. Since the arduous task of collecting fuelwood is performed by women, male household heads see no cost in this labour. Thus for the male-dominated household, cash income is seen as more important than fuelwood income. In response to this dilemma, the author does not suggest the need for programmes directed at rural women but argues that a social forestry programme cannot produce much change by itself.

The author argues that contrary to common knowledge, a large percentage of the rural poor in fact own land, though often unproductive. Therefore,
while he concedes that a major factor stimulating conversion of farms to wood-lots is to save on labour costs, he argues that the poor are not losers (because of lost wage income), but are actively involved in planting trees on their own land. He presents data showing that the “poor” (not defined) own a significant fraction of planted farmlots, even of large ones.

He argues that despite the dominance of commercial interests on the part of participating farmers, the social forestry programme will undoubtedly mollify the rural fuelwood situation. Firstly, there will be “lops and tops”. Secondly, even though at present farmers are directed at solely producing timber, the market will not be able to handle all of this new supply, leading to the use of trees for other purposes including fuelwood.


An introduction to the concept of social forestry as it relates to rural development is provided in this short book. The authors give concise definitions to many of the basic terms used in the field. They also outline in simple fashion the major obstacles to development with brief chapters on the resource, organizational, policy and systemic constraints which are frequently encountered. Another set of chapters reviews some of the means by which these constraints may be overcome. The final section of the book describes the potential problems for forestry in rural development situations, and ends with a very brief outline of major lessons for forestry planners and administrators. A substantial bibliography on social forestry and rural development is also provided.


This report contains observations made during field visits in the period 1970-82 concerning changes in the incidence and uses of plants in the Embu district of eastern Kenya, where the Mbeere people live. The authors cite land reform-induced intensification of agriculture, with replacement of millet and sorghum by maize. In addition, they note the individualization of land tenure during the period resulting from the tightening of usufruct sharing. They present a list of categories of activities ranked according to the difficulty for people engaged in these activities to obtain usufruct from a landowner (ranging from crossing rights to rights to plant trees).

They explain the gradual replacement of traditional dwelling structures by brick houses with iron roofs as a result of the desire to “be modern”, as well as of declines in the availability of traditional building material, this latter brought about in turn by a decline in biological productivity and by population growth and commercialization of charcoal and the reduction in the size of the effective commons. Similarly, they note declines in the use of traditional medicines, making the point that the desire to be modern in all of these cases is too simple an explanation; often the “modern” alternatives work better.

The overall theme of this collection of essays is the relationship between indigenous knowledge and development, emphasizing the necessity that development planners take into account the vast, locally-specific knowledge accumulated by local peoples concerning their production systems and the environment around them. The articles include case studies of participatory development, analyses of the impact of Westernization/development on the decline of indigenous knowledge systems; a description of the rationale and functioning of various indigenous production systems; and more general articles concerned with various aspects of the relationship between indigenous knowledge, Western concepts of development, and development practices.


The author criticizes the view that privatization stimulates economic development, and argues for a better understanding of the property relations on public domain lands and for a better understanding of cause and effect between property and economic development.

He defines four types of resource regimes: state property, private property, common property, non-property, and argues that no property regime is inherently more conducive to sustainable management; he further argues that degradation is not the fault of the property regime, but rather of the breakdown in incentive mechanisms.

In discussing the development of open-access resources, he maintains that the necessary precondition for development is the conversion of the open-access regime to one of common property.

Regarding benefit-cost analysis, he argues against the common practice of discounting future benefits with the interest rate, and suggests the use of one discount rate for project costs and another for project benefits.


This text presents a review of rapid rural appraisal (RRA) techniques useful for understanding tree and land tenure issues within a local community. The author presents appraisal strategies for understanding tenure issues in the agricultural holding, the commons, and the government forest reserve.

He offers an example of entrepreneurial success which diminished a farmer’s tenure security by increasing the community’s attention towards his surplus; he points out that in choosing RRA study areas, the region must be stratified not only by socio-ecological zones but also by access to roads/markets. He cites examples of élites procuring a majority of project benefits for themselves.
and he suggests that this may be avoided by including, from the conception phase of a project, representatives from all participating levels (government, donor agency, and local people). He suggests that “to deal meaningfully with tenure one must deal with it at the parcel or field level, because important tenure distinctions exist even within the household’s holding” (pg. 35).


The authors first present the “security of tenure” concept for agricultural holding, defined as the idea that the incentive to invest is increased with increasing security of tenure. After reviewing the evidence supporting this model, they present its limitations which include: the assumption that tree and land tenure are not separable; the fact that in some situations tree planting can increase land tenure security (e.g. establishment of long-term lease rights or tenure through use situations); the assumption in most formulations of the “security of tenure” model, that the household is not the appropriate unit for understanding the local tenure situation (although women in the household are often the major producers of tree crops and at the same time, the least secure in tenure).

In discussing the management of the commons, they present the following advantages of communal control of forest resources over the division into numerous private holdings: management of the resource as a whole (thus avoiding cumulative effects of myriad individual management); distribution of use over a wide area (rather than concentration in a single spot); more equitable distribution of forest products across the community; use of the forest as a community asset to meet community needs; greater protection of a resource from outsiders through the combined social and physical force of a community.

The authors emphasize the importance of two types of diversity in the management of communal forestry: the diversity of the community itself (leading to different tenure “niches”) and the diversity of appropriate institutional arrangements (the ability to control behaviour of members and to exclude outsiders does not directly follow from ownership). They go on to discuss options for dealing with this diversity, including on the one hand, control by a professional forester from outside the community, and on the other, control by non-professional local institutions.

In referring to the importance of tenure in affecting the incentives to plant and husband trees, the authors caution the use of its manipulation to change incentive structures: “tenure serves many purposes other than the planting and conservation of trees and tenure policy must take all these purposes into account” (pg. 18).


This paper is concerned with the wild fruits that are utilized by Zimbabwean households. These fruit-bearing trees in heavily-used forests are conserved by the local populations. This results in a high percentage of the “climax” cover dominated by trees with edible fruits.
The author presents quantitative data on the use of wild fruits by rural households. Most wild fruit is consumed in spring and summer (hot, dry season), the period when there are shortages of cultivated food reserves. This period does not coincide with the phenological cycles of the trees, with maximum fruiting occurring in the late rainy season and early dry season. Children are the major collectors and consumers of these fruits except during drought periods when these famine foods become an important fraction of the household’s diet. Wild fruits are bought and sold in local markets; 75% of survey respondents had previously bought these fruits.


Although largely ignored until recently, there is a now significant interest in agroforestry by planners and researchers in Zimbabwe. In light of this, the authors suggest that care must be taken to recognize and understand pre-existing agroforestry systems. In this short article, Campbell *et al.* provide a general overview of traditional agroforestry as practiced in communal areas.

The farming system employed in this region is based on a combination of annual crop cultivation and cattle raising. The agroforestry system has four major components: main fields, grazing areas, small garden plots, and home sites. Currently, exotic trees tend to be used in home sites and in garden plots while indigenous species are selectively conserved in main fields and grazing areas. Trees are kept for fruit, shade, spiritual value, social significance (i.e. as meeting places), medicinal products, and to some extent for soil enhancement.

According to the authors, any agroforestry interventions should focus on the following: provision of fodder trees because grass for grazing cattle is scarce in the dry season, encouragement of fruit tree planting as well as conservation of indigenous trees, and greater use of trees to improve soil conditions. They conclude by suggesting that the poor reputation of farmers with respect to deforestation and fuelwood problems is undeserved; they suggest that, to the contrary, farmers plant, cultivate and conserve trees and view them as having an important role in their subsistence strategy.


Carter analyses a Nepalese forestry programme designed to foster tree cultivation by farmers on private land from a village perspective. Results of field observations are reviewed as well as the reports of farmers concerning the species composition, location, and population structure of the trees being cultivated. The author also evaluates the methods used in the research.

The major conclusions drawn by Carter include the following: although knowledge about and interest in tree planting varies among villagers, a sig-
significant number know a great deal about it; tree cultivation is a response to locally perceived needs; if conditions of shortage of tree products have existed, it is likely that farmers will be planting trees on their land; and finally, farmers are hesitant about intercropping with trees in high elevation fields because of concern about the impact of shade. For each of these conclusions, the author notes that typical assumptions of outsiders about the need for farmer education about trees and the promotion of tree planting are not born out by farmer behaviour and practice. Thus, the author concludes that any forestry development programme must be built upon the knowledge and needs of local people and not upon preconceived assumptions.


This paper gives a brief description of the author’s experience in attempting to introduce alley farming in a Yoruba area in southwestern Nigeria. At the outset, three factors discouraged farmers from experimenting with alley farming: the need to satisfy certain essential subsistence requirements; the reluctance of small farmers to practice conservation because of the problem of greatly-deferred benefits; and the dependency of women on men for access to land to farm (reluctance to plant trees, fearing repatriation of fields).

The author notes that there was no equivalent in the local language for “alley farming”, resulting in the decision to use the English term. Another problem was the continuous use of the word ‘trees’ in the extension materials, despite the fact that the term has very negative cultural connotations in the context of agricultural production. In view of these problems, the author initially found it difficult to get farmers to sit and listen to the detailed explanations of planting and managing an alley farm. She then substituted the term “tree” with “fertilizer bush” in her discussions with villagers, developing, with the help of some villagers, a skit by the same name (congruent with a local oral history technique). Her report goes on to describe the basic plot of the skit.


This article discusses the role of the state and state development policies in deforestation. According to Castro, contrary to common assumption, local households may not be the greatest source of deforestation. Using a social and historical perspective, Castro traces a large number of deforestation problems in the Mt. Kenya Forest Reserve in Kirinyaga District to “official mismanagement and government sanctioned development activities” (p. 1696).

Castro points out that the Mt. Kenya Reserve is a colonial relic with the original goal of management on a sustained-yield basis, a policy which to some extent was maintained in the post-independence era. As late as the 1980s, there were very few recorded instances of local encroachment and violation of forest use laws, leading local reserve officials to believe the for-
est “safe” (pg. 1698). In the 1980s demand for timber and wood-fuel depleted resources faster than they could be replaced, leading to an acceleration in the conversion of indigenous forests to plantation woodlands of exotics which better served wood and fuel needs.

Tea plantations, according to Castro, posed the most serious problems to the forest, because of their potential as an alternative land use and their consumption of wood-fuel during processing. Although there were other sources of energy available, firewood was preferred because of lower costs and consistent, year-round availability.

In both the case of timber production and tea plantations the government either actively encouraged these resource uses or acted itself as a user through parastate production systems. Castro thus concludes that forest degradation is not simply a matter of population growth or short-sighted land use by local producers, but “must be understood in the context of state resource management policies and practices...” (pg. 1702).


This paper reviews the possible indicators that measure wealth differences among rural households within the same community. The authors argue that the most important indicator is control of land followed by other productive resources: capital equipment (tractors, ploughs), consumer durables, income (farm and non-farm) and livestock.


Cecelski presents the findings of an International Labour Office research project on energy and rural women’s work in several countries in Asia, Africa, and Latin America. Up to now, households have generally been able to obtain necessary fuel from “free” wood and other biomass fuels but at the cost of deteriorating productivity of surrounding lands. The study found that pressure on women’s time has increased because of growing scarcity of accessible fuel-wood. However, women did not regard wood-fuel and cooking efficiency as top priorities; solutions to desperate food and income deficits were viewed as more important. The author argues that the declining productivity of land (associated with wood-fuel shortage) leads to a situation of seasonal male out-migration with more of the household labour burden falling on women. Present time allocation data shows that fuel collection and cooking constitute from 13 to 36% of women’s work time. Responses to fuel shortages by rural households include cooking fewer meals, eating cold leftovers and even changing diets. However, the study found that in a number of areas, food was a much more limiting factor than fuel in the preparation of family meals.

The article concludes urging a participatory approach in the development of fuel supplies or fuel-saving technologies in combination with increasing agricultural productivity (e.g. agroforestry) and/or women’s income earning potential (food processing, ceramics, transport, etc.)
The author uses the case of the Hill Farming Technical Development Project in Azad Kashmir, Pakistan to illustrate important “social-operational” issues that similar reforestation projects may be confronted with. The author first describes the forestry situation in Azad Kashmir. A reforestation project was established in the area to reforest community lands (called Shamlet land). A social assessment undertaken after the project had been started found that although the Shamlet land formally belonged to the community, in reality it was being used as private land. The author traces the historical privatization of this land. Privatization of community lands along with the significant social stratification prevalent in the area have negatively affected the distribution of project benefits.

While wealthy farmers are the ones that offer to contribute Shamlet land to reforestation, they expect the government to pay all expenses, even though they have the means to do so themselves. They also expect the government to protect their reforested land from fodder and grass cutting by poor farmers, thus restricting the latter group’s customary rights. Smaller farmers on the other hand are more hesitant to accept project planting on their lands (due to suspicions that they will lose possession of their land and/or lose fodder collection rights), but at the same time they are more prepared to contribute towards the costs of project planting than the larger farmers. The author concludes by recommending changes in the project and stressing the importance of investigating the tenure-social power relationship in the community and establishing clear, but flexible contracts to secure and clarify claims in future reforestation projects in other areas.

Here Chambers offers a critique of the preoccupations of development administrators and researchers regarding vast surveys. Among the causes for these preoccupations are: large time requirements, information overload, the rigidity of the resulting research approach and problems associated with the survey tool leading to misleading “findings”. He contrasts the survey approach with the ethnographic, “total immersion” of anthropologists and argues that both are too time consuming and generate too much data for most practical development work but that techniques should be borrowed from the latter to design more adaptable appraisals of local situations.

This is a classic book concerned with the management of extension programmes including a description and evaluation of the “programming and implementation management” (PIM) approach for the central agency; a discussion of techniques useful for managing field staff; and procedures for
“managing” local participation. Numerous examples are given, drawn mostly from the author’s experience in East Africa.


In this article, Chambers and Leach stress the importance of the capital savings nature of trees for rural peoples; savings which can be tapped during hard times, thus reducing household vulnerability. They first outline the various external sources of household vulnerability and describe how development programmes have generally tended to neglect projects that are explicitly designed to reduce household vulnerability. They note that the few “social forestry” studies that have looked at how trees are being used economically within the household have concentrated on analysing tree product “flows” rather than trees as assets to be used in response to various contingencies.

The authors distinguish between direct use (subsistence and consumption) and use involving market relations (sale or mortgage). Direct use of tree products provides resources to meet seasonal shortages or one-time needs (e.g. building materials). Contingencies requiring cash include medical treatment, funerals, marriage, loss of capital equipment, and famine (including seasonal food shortages). There are examples given of uses of trees as alternative investments by rural producers, as well as examples of institutionalized practices such as the use of trees to supply bride payments in a number of cultures; more widely-known investments (e.g. lower upfront costs compared to cattle) are also mentioned. In comparing investments in trees with other investment opportunities open to small rural producers, the authors describe advantages (cheap establishment; high rate of appreciation under higher rainfall conditions; high divisibility; and regeneration potential) and disadvantages (common need to have rights to associated land to secure stable tree rights; common situations of ambiguous tree tenure especially when forecasted into the future; heavy state involvement in local forestry practice; and in some regions, the low producer prices facing farmers thinking about producing common tree products such as fuel-wood).

The authors conclude with a list of four generalized policy implications: improved marketing and prices through tree marketing cooperatives, etc.; land reform; tree reform (e.g. giving rights for the landless to trees on common state-owned land); and improved institutions that cause credible tree and land tenure rights to be more secure and less ambiguous. They argue against always promoting village forestry projects on a common ownership basis: in some situations, private ownership will provide more secure long-term benefit to the poor than common ownership arrangements which are often usurped by local elites.

This paper presents a cross-cultural review of types of contingencies (social conventions, disaster, physical incapacity, exploitation, unproductive expenditure) and the use of trees as assets to mitigate the effects of such contingencies. The authors compare the benefits of trees as assets to the benefits of other assets (cheap establishment, potentially high rate of appreciation, divisibility; and regeneration), and go on to stress, in the policy realm, the importance of project design in order to provide clear, full tenure rights of planted trees to villagers. They argue against interference by government officials regarding harvesting schedules, etc., rejecting the notion that such coercion is necessary since the poor have short planning horizons.


The authors identify and discuss the generic biological attributes of trees/shrubs that make them useful in seasonally complementing crop and animal husbandry. They discuss four major ways that trees contribute substantially to the livelihood of the rural poor: micro-climatic effects (nutrient inputs, reduction of wind blast and erosion, reduction of heat stress in animals, etc.), slack and lean season food and fodder, evening out of labour demand across the season (e.g. reducing labour demand during the peaks and providing income opportunities during slack periods); and meeting seasonal contingencies (use of trees as savings).


In this chapter of their book, the authors offer a brief overview of the gainers and losers in three generic Indian forestry programmes: government forests, community forests, and farm forestry. They present a typology for analysing potential forestry projects by evaluating which sectors of the community will benefit and which will lose. They argue that projects that lead to the rich losing and the poor winning while attractive, are not feasible given the blocking ability of the rural élite. They further argue that while projects must provide the poor with benefits, they must also provide some degree of benefit for the wealthy.


Here the authors analyse why social forestry programmes have generally tended not to benefit the poor. They identify a number of reasons why the poor have not planted trees on degraded lands. These include insecurity of land tenure and insecurity of claims to tree products (control over harvesting access and marketing, insecurity of commercial returns due to market instability, and non-existent extension services). They support their discussion with numerous examples from India.

The papers collected in this volume were selected from among those delivered at a meeting held in Thailand, attended primarily by researchers from developing nations in Asia. The papers cover a range of issues related to ‘sustainability.’ The book is divided into five chapters, each dealing with a specific topic, including the sustainability of various farming systems, of how sustainability might be measured, of potential solutions to problems, and of approaches to research on sustainability. The final chapter consists of short abstracts of other papers delivered at the symposium. The volume is useful not only to those interested in the specific locations and topics addressed, but also to those interested in the perspective of science and research professionals from developing countries.


This publication focuses on the contribution forests and trees make to the food economies of rural societies. It also outlines the changes that need to be made within forestry institutions to enable them to make a significant contribution to the food security of local communities.

Forests are defined as large stands of trees situated outside the homestead or farm, and which may or may not be managed. The small stands of trees found in homegardens and on farms are referred to as “cultivated trees”.

Clark illustrates the importance of forests and cultivated trees for rural dwellers as sources of food in the form of fruit, nuts, berries, leaves, honey and fungi; she points out that although forests and cultivated trees rarely provide the bulk of a human diet, their role in food security is often critical. As seasonal, supplementary and emergency foods, the fruit, leaves, nuts, roots and oils that forests provide are essential to many people’s survival. They are sources of vitamins and nutrients, and of herbs and spices that encourage the consumption of food. Furthermore livestock often depend on fodder gathered from the forest.

She discusses the use of parts of forest plants and trees in traditional medicines, which stimulate appetite, help the body to utilize nutrients in food, and fight infection.

The author considers the role of tree products as an extra source of income for the rural poor without which many families would go hungry or become malnourished. Fuelwood and charcoal, rattan and other materials for furniture making, tendu leaves for cigarette manufacture, gum arabic for a variety of industrial uses, numerous oils and resins, dyes and medicines, enable millions of the poorest people in the world to earn the cash income they need to avoid starvation.
Another vital function of forests and agroforestry systems considered by Clarke is that of stabilizing agriculture’s resource base. In some cases, trees improve and enrich agricultural soil and help stabilize water supplies, thus improving soil productivity and making possible sustainable cultivation of marginal lands. Trees also exert important influences on micro-climates, thereby improving agricultural production. They slow down soil erosion by wind and water and reduce sedimentation in rivers.

Clarke describes how these effects benefit large numbers of people in developing countries. More than 300 million shifting cultivators worldwide depend on forests for their food production systems and the maintenance of the productivity of their land; millions of southeast Asians depend largely on fish supplies which flourish in mangrove forests; and hunters and gatherers throughout the world rely to a large extent on the forest for food. Many rural farmers also depend on foods from forest and farm trees, particularly those that can be processed and stored, to supplement their diets and tide them through seasonal food shortages and emergencies such as drought or flood.

In the concluding section of this publication, Clarke discusses strategies for improvement. Regarding forest policy and legislation, five basic suggestions are offered: forest policy should include the production of non-timber forest products; restrictions on forest access for local people should be lifted; rights of ownership or stewardship of forest land should be transferred to local individuals or communities; legislation should be modified to support small-scale income-generating activities based on the forest; forest policies that encourage the non-sustainable use of forest lands should be eliminated and sustainable land use practices encouraged.

Recommendations are made regarding forestry and food security. Policy makers are urged to: revise forestry policies to incorporate people’s needs for food and income; involve the community in devising and implementing food security programmes; promote sustainable, long-term forestry practices; adapt forestry institutions to make them responsive to the needs of local people; stimulate research on all aspects of the linkages between forestry and food security; adapt and develop forestry activities to help counter local food security problems; accord locally-valued products and access to resources the importance given them by local people; grow more trees on farm and fallow land; and improve support for small-scale forest-based local enterprises.

The author stresses the need for forestry institutions to take a wider view of the role of forest management. She calls for a greater awareness of the effects of forestry policies on the food security of local people and cooperation with non-forestry sectors such as education, health and nutrition in the research and implementation of food security projects. She argues that forest staff need to take on a new role as intermediary between the government and local people, to educate and inform forest users of the most appropriate use of forest lands and to work with local people to devise and implement agroforestry projects.

In discussing new strategies for research, Clarke stresses the need to understand how foresters can integrate food security objectives into their activities.
by developing forest products for food and income, improving existing agricultural techniques for growing non-timber products, examining marketing options for non-timber forest products and minimizing any negative impacts of national forestry policy on small-scale forest enterprises. She further stresses that all research should be firmly grounded in local circumstances and needs, and should incorporate interdisciplinary studies covering biological and socio-economic aspects of forest management and food production. Some of the research areas identified as priorities are: techniques for arresting land degradation and preventing soil damage using trees or agroforestry methods; the ecology of different plant and animal species, and techniques for their sustainable production; the effect of forest and trees on groundwater and rainfall availability for agriculture; and the sustainable management of forests for multipurpose uses.


This publication analyses changes in tree and forest resource availability concentrating on the role of these resources in the day-to-day lives of women in developing countries. It examines the ways in which these resources traditionally have been important in the household economy, the ways in which changes in availability have affected the lives of women, and the ways in which information regarding women should be used when designing future development projects.

Clarke notes that trees are important in rural economies largely as a result of the uses to which they are put by women: in many societies, it is women who must find and transport the fuelwood that their families need. It is often women, not men, who gather wild fruit and nuts, find fodder for their domestic stock, and make medicines and other products from woody materials. Women often also earn what little cash income they have from activities that relate, directly or indirectly, to trees and forests.

The author further notes that although in many rural societies, a special relationship exists between women, the family and trees, this fact has often been ignored in development programmes. Many projects have been designed with the male members of the community in mind, with the result that women have sometimes not only failed to benefit from such projects but have even been actively disadvantaged by them.

This publication stresses that women in rural settings have a detailed knowledge of their surrounding flora that few experts can match, and that only women can identify accurately how future projects are likely to affect them, and in what ways they need help. Secondly, projects that aim to foster local community development are seen as being more effective with the support of women.

Through many brief case examples (from India, Cape Verde, Honduras, China, the Sudan, Thailand, Korea, Kenya, Jamaica and Indonesia) the publication explores the way local women have attempted to involve themselves in forestry policy, and project planning and development.

This article discusses the use of diagrams as tools for communication (between farmer and extension agent) and as tools for analysis. The following reasons are among those given to support their use: diagrams allow for more open-ended questioning and answering, (once the researcher provides the overall structure, respondents fill in all the detail); they can capture information which would be less clearly expressed in words; as a visual medium, they can be more easily modified/confirmed in an interactive fashion. Conway goes on to describe briefly, giving examples of useful application, different types of diagrams: maps, transects, calendars, flow diagrams, and Venn diagrams.


This article presents a study conducted in March 1982 at villages on the southern and western margins of the Okavango Delta, assessing the extent of utilization of Hypaheane petersiana and dye plants by the basket industry.

The authors observe that palm over-utilization is occurring in local craft-work industries. They trace the spread of this cottage industry to the development work of the Etsha cooperative and two peace corps volunteers (developing markets in Europe and U.S.). They note the increasing difficulty of collecting raw material (palm fronds and dyes). They conclude by recommending “controlled exploitation of the palm, diversification of the craft-work industry, and a switch from natural to synthetic dyes” (pg. 401). They further recommend that the craftwork industry be managed both at the village level and through the marketing organization and that, “before new industries based on indigenous natural resources are developed, the quantity of material required annually should be estimated and reconciled with the abundance and productivity of the resource plants” (pg. 401).


This field manual provides a practical set of guidelines for various approaches considered essential for sustainable and successful community forestry. It reassesses many of the conventional monitoring and evaluation methods and tools, favouring a bottom-up approach which encourages, supports and strengthens communities’ existing abilities to identify their own needs, set their own objectives, and monitor and evaluate them. This approach focuses on the relationship between the beneficiaries and field staff and the beneficiaries and the community. It builds on two-way communication, clear messages, and a joint commitment to what “works” for the community.
The manual is organized into three sections. The first section introduces the idea of PAME (Participatory Assessment, Monitoring and Evaluation). The principles of PAME, where it will work, and where it can begin are discussed along with its benefits. This section also offers suggestions for dialogue among field staff. Section two provides the methods for determining the ways in which data can be analysed and presented. Each of the chapters introduces the method, defines its benefits, and examines the steps which must be taken using the particular approach. The final chapter in the section looks closely at the importance of presenting results of the collected information. The third section of the manual introduces 23 different tools, ranging from group meetings to participatory video evaluation, and their uses. Guidelines for choosing the most appropriate tool are given and an overview of the main characteristics is provided.

The author notes that while it may not always be possible to adopt the whole PAME approach in every project, it is possible to experiment with some activities to see if PAME works.


This work outlines approaches and techniques necessary for a truly participatory development strategy. This strategy is divided into four phases: assessment (including community selection by outsiders, community problem analysis and participatory baselines), monitoring, evaluation and feedback.

In discussing the assessment phase, and - more specifically - community selection, Davis-Case stresses the importance of finding communities which perceive of, and are actually or potentially organized around, needs and problems which coincide with the priorities and resources of the agency. Regarding community problem analysis, the author argues that while necessary at the beginning of any project, the methods of community problem analysis can and should occur during later stages as well in order to identify causes of lagging interest in an ongoing project, to evaluate the relative success of a project, and where necessary to permit resolutions in crisis situations. Issues discussed include problem identification, physical potential, community constraints, and community organization. Regarding participatory baselines, the author notes that much of the information and data collected at the early stage of a typical project in order to evaluate change is often only useful at a late evaluation stage of the project and does not provide information to evaluate ongoing management. The author stresses the importance of the community’s involvement in deciding the minimal amount of information necessary to evaluate future changes and progress in an ongoing project.

In treating the phases of participatory monitoring and ongoing evaluation, the author describes the activities associated with periodic recording and analysis of information or key indicators. She stresses the importance of establishing and agreeing on the purpose as well as the who, what, how, and when of participatory monitoring.
In treating the final phase, information analysis and communication of results, Davis-Case notes that the form which analysis takes depends largely on the criteria/indicators chosen for success as well as the tools used for investigation. She gives suggestions for effective oral, visual, and written communication of the evaluation results to particular interest groups. She provides brief descriptions of a list of tools/techniques useful for collecting information in a participatory fashion and for stimulating participation (e.g. group meetings, mapping, theatre, ranking techniques, community case studies, etc.). She considers the major advantages and disadvantages of each tool/technique described, along with the resources they necessitate (time, training, expense).


This book presents an overview of non-timber commercial and subsistence uses of products derived from the forests of Southeast Asia.


This book traces the history of the rubber industry, focusing on the impact of the international market on Amazonia’s regional economy as the cultivation of rubber spread in other areas of the world (but not in Brazil) and demand grew tremendously. The author analyses questions concerning: how Brazil lost its rubber monopoly; the reasons behind the initial failure of rubber cultivation in Brazil; the failure of the American rubber plantations during the war years; and the continuing struggle of the post-colonial Brazilian government through research and development to introduce a commercially-viable system of agriculture. A major theme of the book is that ecological conditions of production played as important a role in the commercial development of rubber in Brazil as more commonly invoked social and economic determinants.


This report describes the Majjia Valley Project in Niger, an alley-cropping scheme (for windbreaks: double row of *Azadirachta indica* spaced 100 m apart) initiated by a PCV and local forestry official with CARE funding. In terms of number of trees planted (and the associated microclimatic benefits), the project has been an unqualified success. By 1984, approximately 300 linear km of windbreaks crossed the valley floor, protecting about 3000 hectares of cropland. Private and public wood-lots had been established in many of the Majjia villages with seedlings from project nurseries.

Among the reasons for community resistance to the project, the authors mention concerns about ownership loss (e.g. state taking over community land); about the unequal nature of the burden of land lost to windbreaks.
(some farmers losing as much as 25% of their land); and about the trees acting as refuge for crop pests. Regarding concerns about ownership loss, the authors explain that in this project, it is the foresters who control the timing, nature, and techniques of harvesting with one-quarter of products harvested going to the owner of the field where windbreak trees grow and three-quarters going to cooperative authorities who decide subsequent allocation. Villagers donate labour (some get paid with small quantities of food) in planting windbreaks, CARE pays caretaker to watch over windbreaks during the dry season for the first five years.

The authors point out that, with the reduction in pasture area in the valley, many herds have been liquidated, but that no detailed studies have been carried out on how this has impacted social relations within the household and the economic situation of women; they note that women, seeking to attain modest personal independence, and able to find work only on the margins of the economy, bear a particular burden.

In describing the positive effects of the Majjia Valley Project on the local population, the authors point out the greater awareness of the need for reforestation and for the planting of trees. This is exemplified by the demand for tree seedlings at the three project nurseries, in the enthusiastic response to the idea of private mini-nurseries, in the success of private and public woodlots and in a few examples of individually-planted windbreaks.

The authors discuss the need for structures which can handle long-term user-management, and which either did not exist at the onset of the project or were unsuitable because they lacked technical expertise, or because they represented factional interest. They add that the sustainability of a user-managed system depends on whether the income from harvestable windbreak products can cover the cost of upkeep and protection.

The process of individualization of land and tree tenure pre-dates the project and can be attributed to population growth (handing down of land from generation to generation in ever smaller parcels) and an increasingly monetized economy. The authors suggest that the project may have contributed to intensifying this process: field owners try to assert exclusive right to the trees on their land and the forest service tries to keep live wood from being cut down.


This study explores the economic framework of smallholder agriculture in Kenya, particularly in relation to tree growing management and practices. Although much of the report focuses on tree-growing activities in the Murang’a District, a high potential agricultural zone in the Central Province of Kenya, many of the observations and conclusions are relevant to other parts of the country.

Among the issues discussed are: the current state of knowledge about the extent of tree growing in high potential areas of Kenya; how rural capital
and labour constraints may account for the widespread adoption of different tree growing practices; the evolution of the traditional land tenure system in the Murang’a District and the resulting changes in the relationship between land tenure and tree tenure.

The author dedicates a chapter to black wattle, valued for the high tannin content of its bark, and which became a major export crop for Kenya and an important source of income and political power in many Kikuyu areas. He discusses the importance of black wattle production during the first half of this century when Africans were excluded from producing cash crops and the returns from food crops were low. Although wattle continues to be grown in parts of Murang’a District, its role in the smallholder economy declined during the State of Emergency. With the removal of controls on smallholder coffee and tea production, wattle lost its value as a cash crop.

Dewees concludes his report by examining some of the challenges facing planners and developers in their efforts to encourage farmers to grow more trees. Tree planting innovations must be placed in a context which takes into account local farmer ability and knowledge. Since tree growing is one result of labour and capital constraints limiting agricultural development, it is evident that if these constraints are effectively addressed, there will be less incentive for farmers to grow trees. He criticizes the lack of consistency in existing controls on tree cultivation and management, and urges that farmers be assured that they, and not the Government or the local administration, will reap the benefits.


Dewees argues here that many analyses of the wood-fuel crisis have not made the important distinction between a physical scarcity and an economic scarcity of fuelwood.

In situations where there is a physical scarcity of fuelwood, the costs of tree-planting may greatly exceed the costs of obtaining alternative fuels (e.g. walking greater distances, switching to dung and agricultural waste, etc.). Dewees makes the point that a “dynamic” or historical approach to scarcity must be used in order to gain a better understanding of how the fuelwood constraint has changed with respect to all the other constraints facing the rural household (e.g. for the interpretation of time allocation studies). The household labour situation is most critical: the economic scarcity of fuelwood (and the amount used) is much more closely related to labour availability than to physical amounts of fuelwood available. The time spent on fuel collection often goes up in semi-arid regions during the dry season when labour is freed from agricultural activities. Dewees cites examples in Sudan which suggest that the price of urban charcoal is affected by the agricultural demand for labour: it is highest during the agricultural season (despite the fact that labour costs make up only about 1/5 of the total retail price). He gives examples of tree-planting schemes which were originally planned to relieve local fuelwood shortages where trees were being used to produce fruit and construction timber. And he questions the
normal assumption that deforestation is driven by the need for fuel, citing work showing that the major cause of deforestation is agricultural clearing and overgrazing which limits the regenerative capacity of arid woodlands. He describes the use of alternative fuels and changes in cooking habits as responses to wood scarcity, and argues that these responses, given the household labour situation, may be preferred to tree planting.


Dove’s article stresses that foresters should have an understanding of the people for whom they are designing development projects; he argues that many such projects may be doomed to failure from their very inception if foresters do not appreciate how farmers live and work. The author claims that traditional social science has contributed very little of practical value to this aspect of development research, although due not to inherent constraint, but to a failure to choose the most relevant problems for investigation.

Dove systematically outlines numerous beliefs which professional foresters harbour concerning local people which he contrasts with the results of a base-line study he conducted to assess farmers’ needs and interests. He notes that foresters’ perceptions of farmers and their needs or interests differ on eight basic points, all of which are key in developing a successful farm forestry programme. For example, many foresters initially believed that farmers had little interest in or understanding of trees. Dove’s research revealed that more than two-thirds of the farmers had significant numbers of trees on their land, with over fifty percent of these having been planted (as opposed to occurring naturally). Dove finds a similar lack of understanding of the major obstacles to tree planting, of the types of trees farmers would have liked to plant, of the purpose of the trees, of the farmers’ fuel preferences, of the timing of planting, and of the type of farmer most interested in planting trees and in need of assistance.

Dove makes the point that many of the foresters are originally rural people and thus assume that they have sufficient understanding of rural life. Therefore, they underestimate the need for social science experts to survey rural people regarding their needs and concerns. Dove concludes that development impasses are more likely to derive from discrepancies between development sponsors and farmers about what is wanted, rather than from cultural backwardness or illiteracy on the part of the farmers.


This article describes and critiques the negative views that Indonesian government officials hold regarding swidden agriculture, which they see as irrational, destructive, and uncontrollable. Dove argues that this view, along with an idealization of intensive rice agriculture, is based on a cultural myth which ultimately serves to sustain the local culture and the political and economic policies of its government.
This myth justifies a number of government programmes that work directly against the interests of swidden agriculture. The author presents production data showing the low productivity per unit area of swiddens but high productivity per unit of labour of swiddens when compared with irrigated agriculture. Since labour is in much shorter supply than land in the swidden zones, swidden farming makes sense as long as that situation persists.

The author traces the historical tension/conflict between swidden agriculture and state interests compared to more intensive forms of agriculture which enhance a state’s control of an agricultural population (higher population density, capital investment requirements, etc.). He maintains, for example, that “irrigated rice cultivation developed in Java’s lowlands not only because the environment made it possible there but also because the developing states made it necessary; and swidden agriculture persisted in Java’s highlands not because it was necessary there but because the absence of state control made it possible” (pg. 15). Swidden cultivators were not only outside the state’s control but also represented a threat since low population/land ratios common then and the alternative of swiddens meant that the state often had to use coercion to keep farmers working on intensive rice plots down in the valley. Thus, the author questions conventional “Malthusian” explanations which relate population growth directly to agricultural intensification, which is then related to state-building; and he argues that in the Javanese case centralized political power was probably actually increasing and maintaining dense agricultural settlements for extractive purposes. The colonial state while less interested in extracting from the rice economy, was interested in extracting from cash crop markets associated with rice agriculture (e.g. sugar cane).


This is an earlier version of Dove, 1985 (see entry 59). It presents a more concise discussion of the factors behind the genesis and maintenance of myths regarding swidden agriculture in the Javanese context.


The author argues that forests provide critical food resources, particularly in times of food shortage. Such shortages are often seasonal, corresponding to agricultural production cycles. The article also describes the contribution of forests to food resources both as a source of gathered food and as a habitat for game hunting. Trees may be incorporated into farms themselves, cultivated for their ability to provide food at strategic times. The author notes that in some cases, seasonal food shortage may not be caused by production cycles or weather, but may result from “administrative seasonalties” (p. 6) that create or worsen food shortage. The timing for payment of school fees or loan instalments were cited as examples, in that such costs deter money from the purchase of food.

According to this article, there has recently been a decline in the use of forest foods. This appears to result from factors such as changing tastes influ-
enced by foreign goods, growing populations which have degraded forests reducing availability of forest foods, and a decline in knowledge about the utility of such resources. Despite these factors, forest foods continue to serve as ‘gap-fillers’ in three ways: supplementary foods, seasonal foods, and emergency foods. The author concludes by noting that the ability of forests to provide for these needs depends on the appropriate management and an improved understanding of local tastes and traditions.


This publication, which is based on an extensive literature survey, examines all forest products, both tangible and intangible, that are garnered by local people both for home consumption and sale. All forest products which are not a source of timber, pulp or fuel, are classified as “minor”. However, the author notes that the forests of the West African humid zone region are extremely diverse and that the ways in which people use them are just as diverse.

The study is divided into two parts. Part I serves two purposes. The first four chapters review what is known about the way people use and value the forests of the region. It divides the uses of forest products by function. The second set of three chapters is analytical in nature. It examines the ways that increasing population pressure, changes in agricultural and hunting practices, and increasing commercialization, are affecting forest areas, their use and utility. It also examines how the importance of non-timber forest products can be assessed and how forestry activities can be developed in order to incorporate the values and needs of rural people. Part II is an extensive annotated bibliography that includes an overview of the literature and assesses the availability of information. More than 300 sources are reviewed.


This publication provides an analysis of the role forest resources play in supporting nutrition and food security throughout the world. Intended as a reference guide for development workers, researchers, technicians and scientists, it includes an extensive annotated bibliography covering: forestry, nutrition, botany, anthropology, ethnobotany, wildlife, geography, farming systems and rural development literature.

The term “forests” is used to refer to all wooded uncultivated areas including rain forests and open savannah woodlands. “Forest products” refers to all products occurring within forests (including animals) and not just trees and tree products. “Farm trees” indicates all trees occurring on cultivated lands. “Homegardens” indicates intensively managed gardens which combine perennial woody vegetation with herbaceous plant crops.

In analysing the contributions of forest and farm tree foods to household nutrition, Falconer makes reference to the vast numbers of foods garnered
from forests, including nuts, leaves, fruits, gum (used, in the case of gum arabic, as a milk substitute), fungi, salt, honey, and wild animals, including insects, rodents, wild game and fish. Collectively, they provide protein, energy, fibre, vitamins, and essential minerals to the human diet. Most importantly, they add taste and diversity. This function is seen as extremely important as it encourages people to consume greater quantities of food and provides them with a better balance of vitamins and minerals. Some products are gathered and eaten raw, while others must go through complex processing to be made edible. Foods requiring complicated processing are referred to as “famine foods”.

Besides highlighting the roles forest products play in overcoming seasonal food scarcity, this publication also examines the impact that diminished land availability and commercialization have had on resource use and availability.


This report focuses on the socio-economic effects of forestry on household food security. Income and foods which are obtained from forests are examined, with special attention to their importance in different situations and to different segments of the population. The report also describes the implications of degradation of forest resources and the significance of this for forest management policies.

The report is organized into four chapters, the first of which introduces the main subjects considered; these are then reviewed in greater detail in the subsequent chapters. Chapter 2 focuses on the role forests and trees play in providing food for rural people, especially agriculturalists. It discusses the links between forests and nutrition, the types of foods obtained from forests and the extent to which these foods figure in household diets, and changes in forest food-use patterns. The third chapter focuses on forests as sources of employment and income, pointing out that forests contribute both directly and indirectly to the livelihood of local people. The final chapter investigates the connections between trees and other aspects of the farm economy, essentially reviewing the costs and benefits of the tree components in farming systems, including homegardens.


This is a technical review of the uses of leguminous trees in semi-arid regions for human food, fodder, fuel, and agroforestry components; he concentrates on presenting evidence for a nutrient enrichment effect of leguminous tree planting in fields, e.g. *Acacia albida* in the Sahel. The discussion is centered on the productive potential of particular species and genera with descriptions of various production systems and how they are organized and controlled by local communities. Most of the examples come from the U.S., Mexico, India and West Africa.

This paper describes productive and management aspects of the homegarden system of the Chagga on the south and east foothills of Mt. Kilimanjaro (Tanzania). After a brief geographical description of the area, the authors outline the major species and their temporal and spatial arrangement in the gardens to supply food, cash crops, fuel and fodder needs of the household. A species mix is produced through differential retention of native species along with active planting of natives and exotics. Of particular note, grazing animals (cows and goats) are very much part of this system.

They go on to describe briefly the major management aspects of this system, stressing the intimate ecological knowledge of these systems held by the farmers. The system’s sustainability is in question however due to a labour shortage (resulting from a high out-migration rate of young men) and to a land shortage (resulting from a regional growth in population).


This article describes how a number of multipurpose trees are deliberately retained on farms on steep slopes in parts of Nepal as contour strips to provide fodder and firewood. It describes the geography of the region and the basic functioning and location of this agroforestry system, evaluates the importance of these trees in supplying wood and fodder to local households, and considers the factors which have affected, and in the near future will significantly affect this management system (e.g. population growth, ecological degradation, holding fragmentation).

68. **Food and Agriculture Organization of the United Nations. 1990.** “The impact of fuelwood scarcity on dietary patterns: hypotheses for research” in *Unasylva*, vol. 41, no. 160, pgs. 29-34.

This article is best viewed as an agenda for future research on the role fuelwood plays in diet. It presents 14 hypotheses, many based on common assumptions about fuelwood use, virtually all of which the author notes, have a “common-sense” appeal, but remain largely unsubstantiated by research. The hypotheses all generally consider the “relationship between fuelwood scarcity and changes in food-related behaviour, including production, distribution and consumption” (pg. 29). Many of the hypotheses presented highlight the role played by women, and the paper points out that it is especially important to conduct research exploring the relationship between gender and the fuelwood issues identified here.

This report illustrates some of the links between forestry and food security, and shows how forestry activities can and do have an impact on food security. “Forestry” is defined in a broad sense to include management and use of trees and shrubs on farms and grazing areas, as well as within established forest reserves. “Food security” is defined as the economic and physical access to food, of all people, at all times. It is dependent on the reliability of production and on people’s access to supplies, and therefore encompasses questions both of sustainability and equity.

This publication discusses the complex interactions between people, trees, forests, agriculture and food production. In many rural areas, forests and farm trees provide critical support to agricultural production (e.g. maintaining and improving soil conditions, and maintaining hydrological systems); they provide food, fodder and fuel, and they provide a means of earning cash income. Thus both directly and indirectly forestry activities may have an impact on people’s food security.

Also discussed are ideas about how forestry policies and programmes can be directed to improving food security, especially for the poor.


This report relates the experience of a participatory-learning workshop intended to introduce participants to concepts and methods of self-help forestry planning. It reviews theoretical concepts and provides practical guidelines to facilitate self-help forestry planning. It covers three main topics: the role of trees in farming systems, with particular emphasis on indigenous knowledge and traditional resource management in Asia; the importance of local participation, factors affecting participation, and means of facilitating participation; the integrated approach to project planning which addresses the needs, attitudes and constraints of the local populations.

Two stages of the workshop are described: field trips to village sites as a primary learning tool; and intensive discussions of ways in which the participants might apply participatory techniques to facilitate self-help forestry in their own countries. Resource incentives as an effective means to encourage and support local initiatives are discussed, as well as the exploitation of “natural” social groups.

The last chapter of the report focuses specifically on the steps a forestry officer might take to foster self-help project development within the village.


This publication presents the main features, prospects and problems of small-scale enterprises and what support could enhance their development. These
enterprises process a large part of the raw materials from the forest and supply some of the main markets for forest products, and can therefore be seen as an important part of the forest and forest industries sector. However, many small enterprises are unstable and offer little security or prospect of self-reliance. Because of their close association with other rural economic activities, small-scale forest-based enterprises can only realize their potential if their development is integrated with that of agriculture, larger forest industries, forest resources development and rural manufacturing as a whole. Common weaknesses, such as their tendency to exploit and underpay workers and their inability to yield adequate profits for those who invest in them, need to be corrected. Both problems are aggravated by flaws in the way enterprises are organized and by excessive dependency on middlemen for access to markets.

This publication aims to increase awareness of the small-scale forest-based enterprise sector, and about what needs to be done to help it attain sustained viable development. It brings together quantitative information on the nature and magnitude of these enterprises, and applies to these forest-based activities a wide range of relevant experience in related fields.


This publication is based on extensive reviews of case studies and contributions from a range of specialists. It explores the role of forests and trees in rural communities and describes a variety of cases in which growing, managing and using tree products is of direct benefit to rural people.

Part I reviews traditions of rural and environmental management which balanced the need for trees with other land uses and which have been greatly weakened by growing demographic, social and economic pressures.

Part II discusses various approaches that have been adopted in developing participatory tree growing and management activities. Three main strategies of community forestry are defined: tree growing carried out under collective management or the management of communal organizations, tree planting and management at the level of the individual farm to provide outputs for household or family use, and farm-level tree growing to produce cash crops.

Part III covers the broader framework of government support services and of the institutional setting within which most communal and farm forestry activities will function. Specific issues in programming, planning and design which are discussed include economic analysis in the project preparation process, the farmer’s perspective of tree growing in the rural agricultural economy, the need for monitoring and evaluation of rural forestry programmes, institutional arrangements, and extension and education approaches. Also covered is the role of forest services and of non-governmental organizations.

Although the study defines broad classifications of systems and strategies, it is recognized that each situation is to some measure unique and needs to be
dealt with individually. There are no universal prescriptions that can be applied to every programme. Each must be defined and structured in terms of the particular needs, aspirations and possibilities of the people involved, and of the broader framework of local and national institutions and policies.


This publication presents the objectives of the Forestry for Local Community Development Programme, which ran from 1978 to 1986: to raise the standard of living of rural dwellers, to involve them in decision-making processes and facilitate their participation in a large range of activities which would be a direct benefit to them. It describes the rural dependence on wood, the major constraints encountered when initiating programmes, and suggests possible solutions and specific forestry practices which can benefit the rural poor.

74. **Fortmann, L.P. 1988.** “Great planting disasters: pitfalls in technical assistance in forestry” in *Agriculture and Human Values*, vol. 5, nos. 1-2, pgs. 49-60.

Types of criteria useful for evaluating “social forestry” projects are discussed in this article. They include: biological factors (number of trees planted, survival rates, etc.), process (e.g. degree of participation of clients in various stages/aspects of project) and social outcomes (distribution of benefits and costs, often determined by pre-existing distribution of power).

The author cites three indicators of positive social outcomes: “1. Disadvantaged groups have secure rights to the benefits of the trees and their products; 2. Disadvantaged groups do not bear a disproportionate share of the costs; 3. The products have sustainable value” (pg 52). Six areas where projects are most vulnerable to the skewing of net benefit to the economically/politically powerful are identified: distribution of benefits; security of claims; distribution of costs; product value; security of value; and bureaucratic access.

75. **Fortmann, L.P. 1986.** “Women in subsistence forestry” in *Journal of Forestry*, vol. 84, no. 7, pgs. 39-42.

In the context of subsistence forestry, Fortmann argues that women are the major collectors, users and knowledge-holders of forest products as well as the major knowledge-holders and managers of forests in developing countries. She notes that the bias against women foresters within the forestry community is strongly related to its limited effectiveness in addressing subsistence forestry problems in less developed countries. Rural women need to be treated as the important players they are by male extension workers (which includes providing avenues of credit and secure tenure directly to women) and there need to be many more women professionals who can more effectively interact with local women than their male counterparts.

This article provides many examples of how tree and land tenure are often quite separate and alienable. The allocation of the specific bundle of rights to tree products is often quite complex with the right to own or inherit trees, the right to dispose of trees and the right to exclude others from the use of trees and tree products often held by different people for different tree products at different times. The implications of tree tenure issues for the design of agroforestry projects are discussed.


This brief article describes the experience of an innovative reforestation project which established the village of Betagi in a deforested area of Bangladesh and which demonstrates both the potential and the limitations of a strategy of securing project land claims through a solely tenure strategy. Previous to the project, the area had come to be used by local élites for livestock grazing. The project attempted to reforest the area by settling landless households in the area, thus establishing the village of Betagi. The land was leased from the government over a five year period, to be renewed for a longer period upon successful forest establishment. It was leased to the group as a whole rather than to individuals. This was intended to limit alienation of land through outside pressure. Despite this initial plan and strategy, the project eventually became successful only through the active political and physical struggle of the settlers. Initially, the élites who were evicted to make room for Betagi waged a campaign of harassment, followed by a legal campaign. This was all exacerbated by the bureaucratic delays concerning the renewal of leases. Despite the original planning and the struggle of the settlers, the project would have failed without the initial support of some important political figures; later the international prominence the project acquired provided the needed support to keep it going.


This article describes the use of aerial photographs/sketch maps in a semi-structured interviewing approach (using a list of topics rather than a questionnaire) to facilitate communication between forest users and foresters about tenure, forest management, forest use history, etc. These techniques are very important since the spatial characteristics of land use have such a definite impact on forest management. Three cases from Indonesia are discussed where these techniques were found to be extremely useful.


This article reports on trials to grow two legumes, *Leucaena leucocephel* and *Gliricidia sedium* as hedgerow species in alley farming or in even-aged “feed garden” stands with the goal of providing supplementary for-
age to confined sheep and goats in the humid tropical zone in Nigeria. The authors discuss the factors contributing to failure at different sites. These are: a shortage of fertile cultivation sites (e.g., competition from food crops); impermanent usufruct rights accorded to the individual for particular types of village lands; concerns that tree planting would allow the government to make future claims on planted land; unpopularity of a companion project surveying the health and nutrition of small ruminants; limited outreach to women (*de facto* managers) in early stages of project; gender differences between those who have decision-making authority regarding land use and planting (i.e., men) and those whose labour will maintain trees (i.e., women).


French argues that the low cost of firewood from open lands in Malawi acts as a barrier to reforestation, and notes that for the government to grow trees to sell as fuelwood at current prices, large subsidies would be required. He further notes that Malawian farmers have little incentive for converting land to wood-lots, because of the comparatively low returns for their labour, and argues in favour of policy approaches which encourage farmers to plant trees for lumber and fruit suitable to their own needs.


This manual offers guidelines for using rapid appraisal methods to gather information on tenure and natural resource management. It translates the concepts elaborated in an earlier volume (see Bruce, entry 29). The author defines rapid appraisal as “a family of methodologies designed to encourage the participation of local communities in the collection and use of information to improve their livelihood. The methods which have been used in all parts of the world, put a premium on the usefulness of research as well as the rapidity with which results are obtained” (pg. 1). She adds that rapid appraisal methodology means dividing resources into three broad categories—holdings, commons and reserves—and then understanding how villages and households approach tree and forest resource management in each category. And she stresses that not only must information be quickly obtained and useful but that it must also be used. That is, agencies must be prepared to adapt their programmes and activities in response to what they have learned about local realities.

Chapter 1 of this manual gives a brief introduction to tenure and rapid appraisal. Preparations needed to carry out a tenure study are discussed in Chapter 2. Chapter 3 suggests practical techniques that have proved useful in gathering information in the field. Chapter 4 presents methods that may be helpful in organizing and analysing the information collected as well as writing the report. The final chapter discusses issues that may come up in using the information that has been gathered and notes some of the common problems that may arise.

According to the authors, in traditional Indian society common property resources were sustainably managed for several reasons, perhaps most significantly because management was undertaken at the village level by members of closely-knit and endogamous caste groups. A relatively small number of individuals dealt with each other repeatedly over time creating bonds of kinship and reciprocity, thus facilitating sound management practice. The imposition of external, centralized control by the British during the colonial period disrupted local community organization and resource management systems. Although this led to rapid degradation of communal resources, some pockets of sound communal organization still exist. The authors note that these could serve as models for re-establishing community-based management of local resources. They also suggest that while it is possible to stop the degradation of communal resources, any initiatives to do so must take into account the nature of Indian society: not only its strong positive traditions of resource management, but also the problems created by conflict in a caste system in the present era.


In the sacred groves of India, presumably since the 6th century AD, all forms of vegetation have been protected from human use by taboo. Elsewhere in India, it is common to find isolated specimens of particular tree species also protected by taboo. This article presents the results of a survey of sacred groves in the Maharashtra section of the Western Ghats. These groves, generally smaller than 3 ha but in some cases as large as 10 ha not only have a spiritual function but they also act as important biotic sanctuaries for important medicinal plants no longer found elsewhere. Generally, private and imam-owned groves are less well preserved than publicly-owned preserves. Originally, protection extended by the reigning deity was absolute: the only possible exception was fallen fruit, allowed to be harvested by the local populations. The authors believe that until recently most of these taboos were respected, at least by the natives, although they may have been violated by outsiders, and in extreme situations by the natives. For example, timber was allowed to be cut when a whole village had been destroyed by fire. The taboos have weakened especially since independence in 1947. It is now such common practice everywhere to remove dead wood and leaf litter that the villagers have even come to depend on sacred groves for fuel. The removal of live wood is still taboo in many groves although even this taboo is weakening. The authors also note that in the 1950s some sacred forests were totally degraded, owing in large part to the urban demand for charcoal.

This paper focuses on the factors that shape the subsistence strategies of settlers of the Upper Huallaga jungle from Peru’s highland areas. Although these settlers are seen as major contributors to the deforestation of the area, the author identifies other factors as well: i.e. government promotion of colonization to increase national security; opening of penetration roads; the legal tenure system. To understand why settlers frequently engage in destructive production practices, one must consider the resource constraints imposed on them by the larger socio-economic system. These include changes in household composition, decisions relating to the hiring of labour, and the relationship between current agricultural prices and household prices (the so-called “reproductive squeeze”). The author argues that one cannot treat anthropogenic environmental destruction as the result of an automatic response of settlers to market and regulatory conditions; the situation is much more complex, with endogenous variables such as farmer income strategies and family size playing important roles.

After a description of the geography and of the major productive systems of the deforestation area, the author analyses the factors contributing to the intensification of land use which leads to reduced fallowing, and subsequent soil exhaustion. These factors include: an orientation towards production for the market; and family size and household supply of labour where agricultural land is scarce. On the other hand, the author notes, where land is plentiful, family size and household supply of labour lead to expansion. Squatters without legal land tenure certificates are responsible for much of the deforestation since a certificate, the first step to legal title of property, is issued only for land actively being cultivated. This does not include fallow grass, extractive forest reserves and the like. Thus, in the beginning colonists will work the largest possible number of hectares as extensively as possible. The author also notes that the agrarian conditions in the highlands, which are pushing these settlers into the jungle, are not being addressed by the government.

The author describes the dual normative nature of participation as both a means and an end (related to the dual social goals of equability and efficiency). He classifies forms of participation on a number of different axes:

- Regarding “scope of the arena” (e.g. household, village, county, region, or sector), he observes that so long as participation in micro-arenas does not interfere with the rules operating in macro-arenas, this can be tolerated in most national development strategies.

- Regarding “participation’s originating agent”, he offers these examples: an élite seeking some measure of social control over the process will result in a top-down organization; a popular protest resulting in an organization around more positive goals can be defined as a bottom-up organ-
ization; a third party change agent or community organizer. The author
discusses the concept of “authenticity” which exists when decision-
making is in the hands of the non-élite, guaranteeing that they will not
be manipulated and co-opted. He further discusses the risks of ‘pseudo-
participation’ where people are mobilized but without being organized
in a way which truly empowers them. He points out the three-way ten-
sions among the state (attempting to control participation), grassroots
movements (attempting to shape governmental decisions) and powerless
non-élite populations trying to gain some control over their own des-
tinies). Thus, the author concludes “participation, in short, is no panacea
for development: its dual nature as both goal and means implies unend-
ing compromises between the antagonistic requirements of efficiency
and equity” (pg. 175).

- He then goes on to discuss “participation’s introduction into the deci-
sion-making process” (e.g. diagnosis of problem, possible responses,
response selection, organizing for implementation, self-correction/eval-
uation, etc.) Here the author comments that the initial point of entry is
crucial in determining the quality of participation. Participation will be
either authentic empowerment of the masses or merely a manipulation
of them, depending on when, in the overall sequence of steps, the partic-
ipation occurs.

rural development: results from a seven-country study” in Rural

This article examines the potentials and dangers of using local organizations
to increase the well-being of the rural poor. Local organizations can act posi-
tively, for example, as vehicles for: the flow of information to break down
communication barriers; the adaptation of project activities to local condi-
tions; the marshalling of local resources; the achievement of greater political
and economic independence for local people; and the coordination and dis-
tribution of the benefits of outside aid. The possible negative effects of local
organizations include: perpetuation of inequitable social systems; control of
the local population from above; and the weakening or even destruction of
viable local cultures.

The authors compare several small farmer agricultural projects which dif-
fered in the way a development agency attempted to create and develop
local organizations. The projects considered, spanning seven countries, were
evaluated by the income change of participating farmers and by organiza-
tional performance (e.g. service delivery, equity, influence and leadership).
The authors found that the involvement of the rural poor in decision-mak-
ing, the high agricultural potential and the high degree of equality of land
holdings were important positive factors affecting project performance.

87. Grandstaff, S.W., Grandstaff T.B., Rathakette, P., Thomas, D.E. and
Traditional Agriculture in Southeast Asia: A Human Ecology Perspective,
This article describes the rapid rural appraisal (RRA) approach used to study the use of trees growing in paddy fields in northeast Thailand, and presents the authors’ findings. The original motivation for the study was to gain an understanding of why farmers in this particular region (and not elsewhere) allow trees to grow in their paddy fields. The authors found that this practice reflects both the economic benefits gained from tree products as well as certain benefits to the rice agriculture system of certain tree plantings. When clearing an area for paddy cultivation, useful trees are not removed; those which are large enough may very well survive even under periodic inundated conditions. Farmers will utilize products from these trees over the years (fodder, human food and medicines, and eventually cut them down to reduce shading of rice and for economic/subsistence products (fuelwood, construction materials) while planting new trees on berms and dikes surrounding the fields to stabilize them).


The author argues that there is a great need for the study of land tenure as it affects isolated Amerindians, a group that has experienced rapidly growing rates of encroachment on its lands by outside groups. Two common legal tenets of property law have led to disastrous consequences for tribal groups: making land alienable or a marketable commodity - a concept which is totally alien to most tribal cultures - led to many land grabs by colonialists; prescriptive ownership and liberalized prescriptive-type mechanisms which require occupancy or exploitation have permitted considerable encroachment onto the lands of nomadic Indian groups. The burden of proof, in the author’s opinion, should be shifted to the encroacher; e.g. the settler should have to prove that Indians in no way utilize the land in question. Furthermore, individual ownership of Indian land should not be recognized legally. Land should remain under the control of the group as a whole in order to limit further alienation of tribal lands.


This brief article describes the Nepal-Australia Forestry Project conducted over a ten-year period from 1978 to 1988 with a focus on its research and management aspects. The author presents an argument for using an ‘action research’ method to approach such projects. Action research is characterized by actions “designed to influence subsequent events and in which the physical and social setting of the research is that in which the problems addressed arose” (pg. 198).


Grownow describes the history of Nepal’s Community Forestry Programme and argues for an approach to implementation which fosters local empower-
ment. After decades of disappointment with federal management of forests, the Nepalese government enacted legislation in the 1970s to return management to local institutions. Under the resulting Community Forestry Programme, government forests were turned over to the panchayats. Early efforts focused primarily on reforestation projects. However, little input from community residents was solicited; consequently local people did not perceive these tree plantations as theirs. According to the author, most forestry personnel in Nepal held that local residents were causing forest degradation through ignorance. Subsequent plans to educate local residents were not however perceived in terms of transfer of authority to locals. The author discusses a more recent approach to local empowerment: the “user group” approach, which recognizes indigenous knowledge and encourages the formation of local groups which develop their own rules for forest management and use.


This brief article reviews community forestry in the area occupied by the Sukuma of Tanzania in the post-Ujamaa period. Government policy in the 1970s made resources collective and organized previously scattered farmers in the Tanzanian countryside in concentrated villages. An unforeseen effect of this policy was the increase in firewood gathering in a concentrated area. This along with the loss of local control and management ultimately led to the degradation of forest resources. During this period, the Sukuma passively resisted government policies and reforestation projects. With policy shifts allowing farmers to leave the villages and resume their previous agricultural practices, interest in tree planting has reappeared. According to the authors, the Mwanza project illustrates three essential keys to the success of a community forestry project: NGOs should take particular care to work with local villagers and village-level groups in order not to undermine local services; trust should be placed in the capabilities and skills of local people with only minimal input from external sources and with realistic assessments of future outside support; and a “common-sense approach” should be used.


This book places the recent popular initiatives to halt deforestation in the Indian Himalaya, such as the Chipko movement, into the context of a tradition of protest stretching back more than a hundred years. The author argues that to characterize the Chipko movement as an environmental movement is mistaken; it is above all a peasant struggle in defence of forest rights. The book addresses itself to two academic traditions: the study of peasant resistance and protest and environmental history. It contains an historical and comparative analysis of forest protest in two different state structures: the chiefdom of Tehri Garhwal and the colonial province of Kumaun. This is followed by a description and analysis of the historical evolution of the Chipko movement.

This paper offers an example-filled discussion of the use of maps/aerial photographs as tools for understanding how local people view various spatially-related processes. The authors point out the usefulness in most cases of supplying an “outline” map which shows various important delineating features such as roads and major geomorphological features. They argue that such exercises can promote interest and participation by local people; can help the researcher understand people’s cognitive maps of their local environments; can often identify processes and situations considered important to local people but unknown to researchers and local civil servants; and can provide at a low cost very accurate mapping information suitable for development planning.


Hafner presents a history of forest use and management in northeast Thailand, an area which has experienced extensive deforestation. He discusses the growth in population and how it has affected the expansion of agriculture; he considers the spread of upland field crops in the post-war period, the development of forest policy and law, changes in the land code, and the investment in regional infrastructure after the war. He discusses how these factors have shaped forest use and management.


This paper reviews the role of Government policies in northeast Thailand granting use rights to degraded forest reserve lands to poor or landless farmers. The authors argue that conflicts associated with this approach are the result of failures by the government to assess population pressure adequately and to design projects addressing community needs.

In the mid-1970s the Thai Government attempted to reform forestry policy, both to resolve its inherent problems as well as for national security purposes (to reduce the perceived threat of communist insurgency in the north and northeast). The Royal Forest Department, given the responsibility of implementing these new policies, established the Forest Village Programme and the National Forest Land Allotment Project. Although under these programmes limited user rights or certificates of use of forest land have been granted, little real progress against forest encroachment and degradation has been achieved. In the authors’ assessment, these programmes were undermined by the context in which they had been implemented: growing population pressure, greater deforestation, instability in agricultural production in the region and grants of amnesty to illegal forest residents. Ultimately, according to this paper, the fundamental causes of the problems in the
region are “embedded in wider social, economic and organizational issues which impinge on the potential success of new approaches to forest resource conservation and management” (pg. 343).


In this chapter of their book, the authors present an account of the economic hardships faced by a poor Bengali family, and their increasing impoverishment through the selling off of their remaining assets.


This paper is divided into two parts: the first explores the conceptual frameworks used to analyse environmental questions in developing economies (e.g. tragedy of the commons, Malthusian model); the second analyses the experience of Brazilian development of Amazonia. Hecht argues that state subsidies available to ranching activities have spurred land speculation with the exchange rather than the productive value of land becoming paramount. She characterizes the military government’s subsidies to cattle ranching as an attempt in part to legitimize itself through economic growth; to increase national security through occupation; to support a cheap food policy to placate labour; and to respond to expanded global demand for beef during the mid-1960s.

After describing the important government colonization/development programmes for the Amazon, Hecht reviews the various impacts on the soil of conversion from tropical forest to pasture.


The authors focus on the role of successional palm forests (through the supply of soil amendments and various subsistence and market products) in the operation of shifting cultivation societies in the Brazilian state of Maranhão. They argue that extraction of products from successional systems contributes an important portion of rural income (compared to on-the-farm and wage income). This source of rural income has generally been ignored in agricultural and ecological resource planning. They argue further that the destruction of these successional systems can destabilize production systems.


This article describes previous efforts in natural forest management in Niger (replacing of indigenous vegetation with species that are not adapted to local conditions and/or not preferred by local inhabitants). The author describes the experience of the demonstration project in the Guesselbodi National For-
est in Niger involving considerable participation of local peoples in the management of existing native vegetation. He further describes the early phases of studying the local ecology, forest use history, and tenure through discussions with local villagers. He then goes on to discuss the goal of achieving a management system which attains autonomy from outside inputs, and provides an example of local sedentary villages using a project to wrest control from pastoral peoples: a guard is posted to discourage grazing for the first three years, with subsequent tight control over grazing; however, people are allowed to cut hay and gather other forest products.


This article provides an overview of the role that forests and trees have traditionally played in food security and argues that this role deserves more attention in policy formulation, programme planning, design and implementation. According to the author, not only has the relationship between forestry and agriculture been neglected, it has also often been viewed as dichotomous, despite the fact that traditional farming practices in many parts of the world incorporate trees in production systems.

Food security is defined as “physical and economic access to food, for all people, at all times” (pg. 3). Forests and trees contribute to food security by providing direct physical access to a range of important products including fruits, nuts, medicines, fodder for animals, and habitat for wildlife which is hunted for local consumption. In addition to being sources of regularly consumed foods, many of the foods obtained from forests are not foods of choice, but rather “lifesaving reserves” (pg. 5) in times of shortage. Forests are important as sources of fuelwood for cooking. Although the relationship between the availability of fuelwood and nutrition is not fully understood, it is clear that cooking releases the nutrients in some grains and is required to make some foods edible. Trees and forests also support food production by holding soil on slopes and terraces, restoring soil fertility during fallow periods, acting as windbreaks, and retaining soil moisture. In some cases, trees are important to fisheries, as in mangrove areas which serve as nurseries to many types of fish.

Forests and trees enhance economic access to food by providing substantial cash income and jobs. Forests are sources of plants and animals which can be processed and sold. Under appropriate conditions, fruit-bearing or fuel-wood trees may be planted as sources of income, with the advantage that they are often not costly to establish, survive times of drought or other environmental stress, and may also be a low-cost option to improve soil conditions. Tree planting is only a viable option if appropriate markets are accessible and tree tenure conditions are stable.

Based on the existing role played by forests and trees, the author argues that strategies for linking forestry and food security must be developed. New policies must be developed and existing ones re-examined to “remove obstacles, offer incentives and minimize risks to the people who are most vulnerable” (pg. 9).
The article also summarizes results from the FAO Expert Consultation on Forestry and Food Security hosted by India and a workshop held in Thailand (the Khon Kaen workshop). At the policy and institutional levels, the most significant recommendation is to recognize the importance of food security in forestry by making it a specific objective. Following that, existing policies and laws governing forest use would be reviewed, legal constraints to tree growing outside of forests removed, regulations to control wood-using industries would have to be developed and enforced, and the needs of landless and poor families addressed in forest laws. Other important modifications would be required in institutional infrastructure and management, training and education programmes at the professional and village levels, coupled with more extension programmes and new directions in forestry research. At the project level, recommendations focused on encouraging interdisciplinary planning in partnership with rural people, in order to identify the major factors constraining food security; analyse project impacts, identify and assist the most vulnerable sectors of the population, implement projects with the participation of local residents, and ensure ongoing assessment, monitoring and evaluation.


This paper traces the history of “social forestry” in West Africa, beginning with the large growth of interest in “social forestry” beginning in the 1970s. The author discusses some of the negative results of “social forestry”: wood and land resources in some areas became scarce when local people were kept out of forestry reserves; forestry skills and information were needed by local farmers for basic human needs; and resource problems greatly exceeded the capacity of the forestry agency.

The author goes on to describe the problems caused by not taking the perceived needs of the community into account in project design. She reviews the experience of “social forestry” projects based on the criteria of ecological soundness, local support, national sustainability, and the project’s ability to solve local needs with equity. She concludes that on the basis of these criteria, most projects would be considered failures. She cites the following myths that commonly plague programme design in West Africa: 1) Fast growing exotic species are the only trees that can successfully fulfill current needs. Yet exotics often die in areas below 800 mm of rainfall and are disliked by local populations (for example, eucalyptus species used as firewood give food an unpleasant taste and produce half the heat of local, slow-growing woods); 2) It is easy to identify the needs of a community upon which to design a programme. Yet there are always conflicting needs; 3) Village wood-lots are simple to establish on vacant communal land and run along traditional lines with the chief as a spokesman. Yet there is often no communal land and the community is not homogenous; 4) If one has only enough information, rational decisions will be made nationally, regionally and locally. Yet huge amounts of data have been collected and go unused.

This article describes a failed, World Bank-financed, tree farming project in the Philippines aimed at providing additional income for the rural poor. The author attributes this failure (low participation rates) to: the interest rate structure of establishment loans; dictated tree species, numerous paperwork requirements for participation, specified labour inputs for tree crop management.

The project is seen as an example of how a top-down approach without user perspective leads to poor implementation as well as an inaccurate evaluation of what went wrong.


This publication discusses the importance of FBSSEs, recognized as vital activities because they provide employment and generate income for millions of rural and urban poor worldwide. These activities involve the collection, processing, consumption and trade of forest products and they often provide essential full time or supplementary sources of income. The focus is on women’s issues in FBSSEs. Case studies from the Indian state of Karnataka examine women’s involvement in two enterprises that have had to confront changing markets and technologies; one regarded the collection and processing of uppage fruits. (The term “uppage” refers to garcinia cambogia, an evergreen tree found in forests in Southern India and to its fruits which are valued for their rind and their seeds.) The other enterprise involved the craft of lacquerware. In both instances, external changes helped these FBSSEs expand, opening up increased employment and income generating opportunities. However, changes in these FBSSEs did not distribute income and opportunities equally to women and men. In one case women benefited because they were able to sell as much uppage rind as they could collect; but they were not able to rise above the lowest economic rung in the new profit ladder that developed. In the lac-turnery industry women were actually displaced or marginalized. Each case raises questions about the roles new technology and institutions play in the process of environmental and industrial change.

104. **Jain, S. 1988.** *Case Studies of Farm Forestry and Wasteland Development in Gujarat, India*. Community Forestry Case Study 1. Bangkok: Food and Agriculture Organization. 60 pgs.

This study examines a range of governmental and non-governmental interventions and independently evaluates the success of each project both as a forestry scheme and as a rural development programme.

The author discusses the costs and benefits of farm forestry (growing trees on privately owned land) from the standpoint of its practitioners. Jain exam-
ines the differential adoption of farm forestry by large and small farmers and the landless, and provides a technical discussion of cases.

The study examines the many considerations that in combination determine the worth of a community forestry project and also incorporates feedback from project participants regarding the ways in which the forestry project efforts have affected the lives of local people and the regional economy. The conclusions reached are supported by the final recommendations of both local project participants as well as those of development workers.


This article traces the history of the Chipko political movement. The author argues that while most descriptions treat the Chipko as a case of spontaneous political organization and mobilization, the movement grew out of a 13 year effort led by Bhatt and his co-workers, and is a Gandhian organization focusing on rural employment creation. The women’s self-initiated action at Dongri Paintoli is seen as having changed the character of the movement with women standing up against the commercial-oriented decisions of their own men for longer-range subsistence/ecological concerns. This action, along with subsequent ones, deepened the nature of the political movement and introduced women as dominant, creative grassroots political actors (not leaders) of the Chipko movement.


This article presents and discusses data collected from 82 villages in 21 districts of India over the period 1982-85.

Jodha discusses the depletion of common property resources due to both restriction of aerial extent and degradation. Poor households, defined in this paper as those of landless labourers and small farmers cultivating less than 2 ha of dryland equivalent, are much more dependent on CPRs for fuel, fodder and fibre than are the households of other farmers. Only in the cases of the harvesting of illegally cut timber and silt from ponds to enrich fields are other households more active than poor households.

The author then focuses on the dynamics and processes behind the observed rapid decline in CPRs, concentrating on the role of public policies and government interventions. The author argues that government policies have been very important factors behind CPR loss in dryland India (via various land reform programmes). The vast majority of the land involved in these programmes was not in fact made available to the poor, and when it was, the poor often did not have the resources (labour and material) to utilize it in an appropriately intensive fashion (e.g. agriculture). Thus, the poor were clearly net losers in most of these land reform programmes. Jodha notes that the observed decline in CPRs is lower in villages with the following characteristics: less extensive occupational shifts; lower degree of commercialization; lower extent of factionalism in
the village; lower socio-economic differentiation; less dependence on state patronage and therefore less ability of the state to interfere in village affairs.

Another section of the paper is concerned with the differences in the response of the rich and the poor to CPR decline. The rich have generally withdrawn from using degraded CPRs and are indifferent to improvements in CPR management. In areas of land scarcity, the rich have been involved in CPR land grabs. The poor on the other hand, without alternatives, have continued to rely on CPRs.

The various academic reactions to CPR decline as well as various approaches and dilemmas facing CPR policy-makers and development agents are also considered.


This manual provides a practical set of participatory guidelines for pilot and national stove projects which can be used by professionals at all levels, in all types and sizes of programmes. Monitoring is defined as a process which involves collection and analysis of data to ensure that a programme meets the objectives of the policy makers, donors, programme managers, and the needs of the users, stove producers and sellers. Evaluation is defined as a process whereby users, producers, project managers, policy makers and donors determine whether the objectives of the programme are being met, how a programme could more effectively meet the needs of households, the impact of the stove’s introduction on specific groups of people or households, and whether or not there is a more cost effective strategy which could achieve the same results.

The author presents a framework for planning and managing stove programmes, as well as a monitoring and evaluation training method. He proposes a simple, low cost participatory method for collecting, analysing and using information to improve the acceptability and performance of the stoves. He outlines a method that can be used to disseminate information about the stove. Appendices including illustrations, surveys and questionnaires are intended to be used to design and implement monitoring and evaluation programmes of a large or small-scale. Information is provided on the techniques that can be used to collect and analyse information.

Examples from Guatemala, Kenya and Nepal are referred to throughout the text and provide approaches and techniques for the concepts presented.


In this chapter of his book, Kaufman presents the major factors which tend to reduce or inhibit unity/communication between field workers and the central
agency (in this case, a Forestry Department). As seen from a local agent’s perspective, communications are hampered by the seemingly broad, and often inconsistent nature of central agency directives. Physical distance (which hampers the frequency and depth of communications) and social distance (e.g. differences in the background and experience of central and field bureaucrats resulting in elitism and language problems) also hamper communications. Often behavioural norms become established within the small face-to-face group of field workers which may work against formally promulgated regulations. Given all the barriers to adequate communications between the central agency and field workers, there is a high potential for the field worker to be “captured” by the local population. That is, situations may arise in which the field agent does not actively pursue an agency policy due to its unpopularity within the local community. Even the agent’s own personal preferences (outside of community pressure) may affect policy implementation under conditions of poor communication and oversight. Subsequent chapters present various suggestions for combating these “centrifugal” tendencies.


This cartoon book tells a story showing how the interests of women and men differ regarding tree products and how a tree-planting extension programme which ignores these differences will fail.


The authors argue that the major reason for the lack of success in bureaucratic extension efforts to involve the poor in sustained development is not the individual failings of extension agents and poor clients, but the way the agency is organized and managed. The behaviour and attitudes of government agents grow out of the bureaucratic context in which they find themselves. The performance measures and the internal structure of awards and sanctions, etc. to which they are subject will influence their approach to those they are responsible for. Three value equations, reflecting assumptions about the nature of the development process, tend to reinforce prevailing bureaucratic practices which inhibit participatory development. The first is the view that “expenditure equals results” (so that large expenditures are seen as the measure of great development progress). The second is that “education equals superiority” (yet, for development to occur, there needs to be a productive combination of expert and indigenous knowledge; both are necessary but either is insufficient by itself). The third is the dominance of projects in development. These projects are set up by temporary organizations and aim for limited, short-term results. Those defending them invoke the argument that they have a “demonstration effect”, yet this is rarely shown to be true.

There is a need for “bureaucratic reorientation” in order to improve participatory development efforts. “Bureaucratic reorientation” involves some individual attitude and value changes, but more importantly it involves changes in job definitions, performance criteria, career incentives, bureau-
ocratic procedures, organizational responsibilities, etc. This can only occur through a “learning process approach” where the central agency initially provides significant autonomy to field personnel in order to develop new programmes which are more responsive to local concerns.


This paper argues that the problematic “transfer” of managerial techniques from the West is not necessarily due to managerial incompetence in Africa, but rather to the inappropriateness of Western management techniques in the socio-economic environment within which African managers work.

Leonard defines four different types of management behaviour: public policy making, organizational leadership, internal administration, and “bureaucratic hygiene” (e.g. accounting, auditing, contract compliance, etc.). Two major value premises are identified underlying American methods of public policy and administration: that there is a commitment to collective, formal, organizational goals (e.g. purposive rationality); and that economics is the fundamental social process, in terms of which all other transactions can be understood. Given the web of social obligation in which African officials are enmeshed (derivative of peasant society) and universal selfish motivations, state organizations in Africa are extensively used to pursue the informal, personal goals of their managers rather than those formally declared and regarding the collectivity. Thus, differences in organizational behaviour between African countries and the U.S. are due to fundamental dissimilarities in the value priorities of these two societies. The author calls for a need to understand how these socio-political realities affect managerial behaviour at the various levels.

Concerning the development and planning of new programmes and reforms, Leonard notes that it is essential for the survival of African states (as it is for Western states) to produce visible, distributable benefits. Thus, the priority is to redirect the state’s activities into areas which can guarantee some economic returns as well as high political ones.


This article discusses the importance of the tropics as a reserve of genetic diversity and medicinal chemicals. The authors stress that efforts to preserve these resources need to be more appropriately directed toward encouraging local-level forest management within a community development context. The indigenous uses of a number of important medicinal plants from around the world are described, along with their active ingredients.


In this paper, the authors describe the experience of a poor rural area (the Bhal, in Gujarat, India) and its efforts to attract social forestry resources. They...
argue that the social forestry programme excluded the poor people of this area and list several causes: direct targeting of the most politically influential; aiming of efforts to areas where biological and social conditions are most conducive to successful establishment (due in part to the seedling establishment targets imposed on local forest officers); provision of only partial establishment costs (for example, the exclusion of the cost for transporting seedlings was easily handled by rich but not by poor farmers); and provision of an insufficient volume of seedlings to make it worthwhile for poor households to stop their practice of seasonal migration in order to manage wood-lots.


This paper describes the role of damar (*Shorea javanica*) in the agroforestry system practiced in the Krui region of South Sumatra, Indonesia. The authors identify two distinct farm types incorporating damar, one of which uses irrigated rice cultivation with damar and another based on dry rice production in conjunction with coffee and damar. The former is restricted to a small segment of the population, based on land availability. For the majority (those without land that can be irrigated), the latter system is chosen by necessity. This second type of farming requires continuous clearing of natural forest for indefinite cultivation, with a succession of crops beginning with rice, which is rain-fed, and ending with perennial plantations of coffee and damar. Under this regime, land is not left to become forest fallow. Thus, to produce sufficient rice to meet their needs, farmers must clear additional forested areas. The irrigated rice system, by contrast, employs a relatively fixed area and thus does not encroach on natural forest settings. However, practitioners of this form of farming do collect resin from damar agroforests and often have other non-farm employment.


The non-industrial uses of the Babassu palm by rural households in Brazil are the topic of this paper. The Babassu palm is very resistant to human disturbance given its cryptogeal germination. (The apical meristem is produced below ground). This characteristic makes it an integral part of shifting cultivation and pastoral farming systems. The authors present survey data for one Babassu palm dominated district showing that a high proportion of households uses the palm for thatch, basketry materials, charcoal, milk, oil and palmito. They describe how and when (in the Babassu’s life cycle) these products are harvested. Noting that the products of the palm are used both for subsistence and cash income, the authors point out that these benefits are threatened by pasture conversion and the recent development of technology for industrial breaking and separation of Babassu fruits into their components, leading to the industrialization of Babassu stands.

Annotated Bibliography


Von Maydell’s guide to the important ligneous species in the West African Sahel provides colour pictures, descriptions of bioclimatic range, and short botanical descriptions of these species. It also describes and catalogues the indigenous uses of these plants. Summary charts are provided for major use categories. Species names are provided in Bambara, Fulfulde, Wolof, Hausa, Tamashek, Gourmanche, More, Serer and Djerma.


This article focuses on efforts to provide direct economic assistance to women at the micro level and which are aimed at strengthening their income-earning activities in the informal sector.

The author discusses other components of a comprehensive approach to grassroots development and structural change: advocacy, policy reform, programmes aimed at asset acquisition and transfer, and, most importantly, basic investment in human resources.

Three types of strategies (not mutually-exclusive) are presented, which can be used to provide direct productive assistance to self-employed women: the area-focused strategy, which addresses a target group of clients within a delimited geographic area, and offers a comprehensive range of services; the sector-focused strategy, which addresses the specific problems confronting micro-enterprises and the self-employed within one or several economic sectors, industries, trade groups, or occupations; and the function-focused strategy, which focuses on a single constraint to productivity and profit. In this regard, the author identifies the shortage of credit as the most common constraint.


The author describes the taungya system of forest management where land is first cleared and planted with food crops. Desirable timber species are also planted, either simultaneously or after several years of cultivation. After canopy closure, the land is used solely for the timber crop with the cycle repeated following the timber harvest. While the origins of this system have been attributed to the attempts of a British colonial administrator in Burma to establish teak plantations during the 19th century, the author cites evidence showing that this system, or ones resembling this one, were practiced in South China as early as the 16th century. The development of this practice is linked to the Han expansion into South China, which forced the indigenous populations, including the Miao, to seek refuge along the steep.
wooded slopes of the highlands. This, coupled with the growing regional demand for wood and an expanding transportation network, led to the integration of the taungya system into subsistence farming and commercial forestry practices.


The author discusses the causes of ecological decline of the Himalaya: forest policy, population pressure, natural causes, and human neglect. He describes three cases where local communities in Nepal organized themselves without outside assistance to protect certain tracts to allow for natural reforestation. Based on these and other examples, the author concludes that traditional Nepalese forest management systems: reflect a significant body of biophysical knowledge about forest ecosystems; closely involve the local people; and appear to be flourishing at the local level. He describes the participatory development approach of the Resource Conservation and Utilization Project (RCU) which utilizes a “village dialogue” method for initial base-line survey, problem identification and planning.


This study on CFR from three world regions brings together and discusses much of the literature. The regional studies, which include extensive annotated bibliographies, are designed to identify, describe and analyse traditional (i.e. local), largely collective forest management systems, and the role of externally sponsored assistance, particularly through projects. They demonstrate the diversity and strength of CFR management forms and functions, and the potential of collective action, often with national or international sponsorship, to promote sustainable tree and forest resource development. They describe programmes and projects directly incorporating the skills and wisdom of local people. Among these, can be mentioned: for Africa, externally sponsored projects in Niger, Sudan, Somalia and Kenya; for Asia, community forestry development projects in India, Nepal, Indonesia, Papua, New Guinea and Sri Lanka; and for Latin America, projects in Mexico, Guatemala, Bolivia, Peru, Brazil and Honduras. Some possible frameworks for analysis of the data contained in the studies are described and discussed.

The authors discuss a wide variety of conditions and perceptions about tree and forest resources and their management, emphasizing the historical circumstances and sociological and institutional arrangements that affect CFR management in particular situations.

The agroforestry garden system on sloped lands in Maninjau (West Sumatra) - which makes up 50 to 88% of the agricultural land for different villages - is described in this article. The authors explain that these “agroforests” are not homogeneous in composition or structure: they are composed in part of annual or short-cycle crops, which are never a dominant component, but rather temporary and scattered; they are also composed of spontaneous vegetation and planted trees, of which there are only six commonly planted species. The criteria for this heterogeneous composition are both historic and economic. These managed forests provide cash income, fuel, fodder and food items supplementary to lowland rice fields.

The following items are briefly described: the production characteristics of the important tree species; the structure of dominant species combinations; and system resource requirements and future sustainability of this system.


This paper describes the agroforestry systems based on *Acacia albida* and other multipurpose trees of the sedentary Fur people on the slopes of the Jebel Marra massif of Sudan. Terraced village fields of millet and other staples are cultivated under stands of trees which have been retained primarily for food, wood, and fodder. The paper also describes: the basic geography and structure of the system(s); the principle uses and productive aspects of the major trees used; and broader trends having an effect on current and future systems.


This paper aims to demonstrate the role that ethnicity, migration, and religion have played in deforestation and land use conflict in Kerala, India. The author examines the debate over land control “within and between states and communities” (pg. 47), which he asserts played a large role in forming the social relations in the High Ranges region. The key factors in understanding the deforestation of this area are state politics concerning settlement patterns and land use policies. To illustrate this, Moench looks at the history of occupation in the High Ranges, particularly that of the Tamils, Malayali, Syrian Christians and Europeans. He argues that land and forest resources were pawns in the struggle for political power and dominance among these groups.


This article describes a system of locally recognized and respected inter-village and intra-village customary rights to land and trees (“turf”), active in a village in Teri Garhwal (India) that supersedes national statutory rights and results in a reasonable level of forest management.
This paper provides an overview of the significance of land tenure regimes for watershed development projects. It is based on a review of literature on conservation and land tenure, with an emphasis on Asia, with examples from China, the Philippines, Thailand, Nepal, India and Indonesia. The author argues that the relationship between land tenure and watershed development projects is not well understood and offers a conceptual framework for addressing this problem. Molnar points out that differences in tenure systems are important to the success or failure of watershed and soil conservation projects for several reasons, perhaps most importantly because the technological and sociological interventions which may be feasible and effective differ among the various systems. In general, the type of tenure system practiced will affect the adoption rate, profitability, and impact of any project. The paper concludes with a number of suggestions of measures which should mitigate problems including: increased extension support, improved access to credit, strengthening local institutions, providing mediation or legal aid, and use of technologies with more rapid and higher returns.


This publication reviews and assesses the range and effectiveness of the various rapid appraisal techniques that are used by specialists in the field. It aims to identify the common elements of different approaches and to evaluate the trade-offs involved in choosing among them; further, it aims to clarify the terminology which has proliferated with the new methods. It addresses several types of users: people working in natural resource management who wish to know about promising approaches; donor agency staff responsible for designing projects in natural resource management who need to know what the method can do for their project and who need to budget for training and staff development to undertake survey and planning exercises; people using RRA techniques who need to know where the potential pitfalls lie in the use of these techniques and how other people have resolved them; host country staff who lack the RRA documentation to develop a comparative understanding of what different approaches have in common.

Rapid rural appraisal is defined as “a process of learning about rural conditions in an intensive, iterative and expeditious manner, specifically designed to improve quality and timeliness and to reduce cost” (pg. i). Carried out by a small interdisciplinary team working directly with local people, it relies principally on a dialogue method. The author points out the usefulness of RRA for foresters who frequently find socio-economic data too voluminous to analyse, difficult to relate directly to programme activity design or management decisions, or so time-consuming to collect that it arrives too late or is out of date before it is ready to use. RRA techniques can be applied to
project design, assessment of local conditions, planning of activities at site level in coordination with local people and evaluation of the impact and effectiveness of interventions.

Among the RRA tools discussed are: interview and question-design techniques for individual, household, and key informant interviews; methods of cross-checking information from different sources; sampling techniques that can be adapted to a particular objective; methods of obtaining quantitative data in a short time frame; group interview techniques, including focus-group interviewing; methods of direct observation at site level; use of secondary data sources. In RRA approaches, these tools are combined to provide a comprehensive methodological framework for gathering and assessing information in the field.

Molnar’s study includes an annotated bibliography.


The major disappointing aspect of the wood-lot experience in India has been the lack of active involvement by the local population. In some cases this is due to inadequate sizing of wood-lots in relation to community needs, resulting in individual returns which are too small. The author suggests that limited participation is caused by the use of the panchayat as the local management institution. The panchayat is an administrative rather than a traditional decision-making unit; it administers over a large population often including a number of villages having different decision-making structures and interests; it does not have a history of actively seeking public participation; it has few financial or coercive resources at its disposal; and finally there has been little transfer of technical knowledge from forestry departments to the panchayat. The author stresses the importance of the need for the panchayat to be actively involved from the beginning of plantation establishment, with clear delineation of each party’s responsibilities. She points out that women motivators have been generally more successful than male motivators in extension efforts directed at female and male villagers; and she argues that if women have control over forest product marketing, it is more likely that profits will be used to improve the family diet.


This paper offers a guide for evaluating women’s involvement in forestry and for designing and implementing forestry projects that successfully involve women.

This book is concerned with the strategizing, designing, implementing and evaluating of rural development programmes and projects. Moris addresses the constraints and problems of performing these aspects of development faced by a development agent within a “real-world” bureaucracy. Numerous examples come from the author’s extensive experience with researching, directing, and participating in development programmes and projects in East Africa. Chapters 2 and 3 stress the necessity of an iterative evaluation-design, trial-by-error, development-as-process approach to programme design and implementation.


This paper is a portion of the script for an extension programme being developed for use in Tanzania. The script’s author, Mshuda, uses narratives by local people to describe their conservation efforts which are largely based on a traditional concept.

Historically, the Sukuma people of the Shinyanga region of Tanzania were pastoralists and had specific strategies for managing the impact of their herds on the environment, including the setting aside of reserved areas for dry-season cattle grazing. These areas were known as ngitili. In the script, one individual recalls how he began to recognize the harm he and his own people were doing by clearing forested areas for shifting cultivation and cattle grazing. In response he applied the traditional idea of ngitili to a forest area which he set aside to provide himself with timber, medicines, and firewood. This effort attracted the attention of other villages and eventually the local village government acted to create similar reserved areas, now called misitu ya hazina or ‘treasury forests,’ on behalf of all residents. Subsequently, the Tanzanian government developed a programme to support their efforts and promote them in other villages.

The article concludes with a review of three key notions the author regards as critical to successful extension programmes: that local people and government officers can work together to develop locally appropriate solutions; that farmers must be treated and depicted as rational thinking individuals; and, finally, that using farmer-to-farmer communication in the local language is crucial.


The author argues here that the models of peasant behaviour implicit in standard extension approaches to combating deforestation in Haiti have led to inappropriate policies and programmes aimed at changing peasant behaviour. These models of behaviour consist of a subsistence household which is performing an ecologically-destructive form of swidden agriculture. Such views lead to programmes which attempt to instill a spirit of conservation (preservation of trees) among peasants. The premises of these programmes diverge from reality in a number of ways. First, Haitian peasant households are very
much incorporated into the cash economy with much of the household’s food purchased in the market. Characteristics of this incorporation are intensive cash-cropping, a cash-oriented livestock economy with livestock used as a bank but with grazing limiting fallow recovery, and the increased commercialization of fuelwood. Second, the swidden system used by peasants is not ecologically-destructive (having been practiced for hundreds of years); what is ecologically-destructive is the elimination of the fallow period.

The author argues that the market for fuelwood which at present is driving deforestation can be used instead for reforestation, through the introduction of short-cycle tree species as new cash-crops in an agroforestry system. He describes a USAID project which followed this approach. The preliminary results of this project are: an impressive rate of planting by peasants (3 million trees in two years) with widespread involvement of all types of peasant households.


This publication describes a range of knowledge and management systems that were, and often still are, used by African herders. The report is based on an extensive literature review regarding arid and semi-arid Africa. This includes North Africa, the Sahara, the Sahel, the semi-arid parts of the Sudan zone, and the arid zones of southern Africa. A few pertinent examples from other areas are also provided.

A large number of practical examples are quoted and the information is then analysed from a perspective enriched by the author’s own research experience among herders of Senegal.

The book focuses on the use and management of natural resources, primarily vegetation, but also water and wildlife. The majority of production systems in these arid zones rely on livestock. Pastoral systems, defined as any production system that relies for more than 10% of its output on livestock, are the main focus of the report, but other production systems that rely on resources in their natural state, such as hunting, gathering, fishing and wood collecting are also considered.

The author emphasizes the need for a pragmatic assessment of the usefulness of local knowledge and management systems, which she defines as “a fluid and dynamic package of elements that change and adapt to new circumstances, and form the backbone of management decisions taken by local people” (pg. 101). She also stresses the importance of understanding the role these systems can play in the development process. She notes that contrary to previous assumptions and paradigms, African pastoralists are active managers of natural resources; she further concludes that the daily management of natural resources is the domain of the individual herder, acting in concert with other herders in accordance with formal and informal traditional rules. The objectives of the herder/stockowner are not static nor single. They depend on his socio-economic circumstances, which can change during his lifetime.
Regarding the management of trees, shrubs and other resources, she observes that many groups have precise harvesting rules (such as when and where to cut), protection of valuable species or groves of trees, and active planting of seedlings; and that African pastoral societies in general do not cultivate fodder because it is not economically viable. She further notes that there are not enough studies on the management (rather than use) of plants for food and medicine, and on what impact the method of harvesting has on natural resources.


This publication discusses the links between nutrition and forestry projects and offers suggestions about how forestry projects should proceed. The author points out that nutritional well-being is one of the non-economic criteria used to assess quality of life. Isolated development projects cannot by themselves eliminate the underlying causes of malnutrition that are deeply rooted in political, social and economic inequalities. Yet, she notes, development projects, and specifically forestry projects can use nutritional well-being as a measure of project success and can use nutritional vulnerability to identify potential project beneficiary groups. She adds that incorporating nutrition concerns into forestry activities is possible once the relationship between forestry and nutrition is understood.

The manual is divided into two sections. The first introduces the links between forestry and nutrition, including a discussion of the causes of malnutrition. The second contains a methodology for incorporating nutrition concerns into forestry projects. It includes examples of how forestry can positively and adversely affect nutrition. There are worksheets that summarize the methodology and appendices that identify indicators useful for planning, monitoring and evaluating the impact of forestry activities on nutrition.


This article looks at the links between forestry and nutrition and describes a methodology to facilitate field work that emphasizes the potential benefit of using these links to promote improved nutrition and access to food. A brief review of the role forests play in providing food, both directly (nuts, fruits, medicines, etc.) and indirectly (stable environment for agriculture, erosion control, leaf cover enrichment of soil, etc.) is included. The author argues for collaborative work between foresters and nutritionists to assure that forestry-related development projects have a positive influence on the nutritional well-being of local people. There are three basic components of draft methodology being developed by the FAO. First, planners will need to gather background information on factors influencing nutrition such as food supplies and sources, income, and time considerations. Next, nutrition-related objectives that are compatible with other aspects of the project must be defined. Third, appropriate monitoring standards must be identified and used.
to evaluate the impacts of the project. According to the author, the key to success for the methodology lies in the coordination of the roles of nutritionists and foresters, combined with participation of community members in the project.


While there is a wide variation across villages and households in their reliance on specific forest products and sorts of commercial arrangements, the author argues that non-timber forest products have and are playing an important role in the economy of the northeastern Peruvian Amazon. She first briefly traces the history of forest markets in the area and then analyses the present situation by focusing on the importance of minor forest products and important marketing networks (e.g. role of middlemen) at the district, village and household levels.


This article describes the commercial use of tree crops from a swidden-fallow management system associated with the town of Tamshiyacu in northern Peru, contrasting the economic situation of this area with those of previously described systems: some of the vegetation that is normally ‘slashed and burned’ is, in the Tamshiyacu system, converted to charcoal and removed. Cleaning of the plot is continued for a longer period of time than appears to be typical among the traditional tribal groups previously described, and the creation and maintenance of an almost pure stand of umari and Brazil nut trees during most of the use cycle contrasts with the very complex older swidden-fallow fields found by other researchers.

The authors present data showing that products from the cyclic agroforestry plots are the major source of cash income with Tamshiyacu households enjoying some of the highest average annual incomes. The success of their production system depends in part on their relatively easy access to the urban markets at Iquitos. The authors point out however that this type of production system is difficult to extend throughout much of the Amazon because of the lack of cheap and reliable transportation facilities.


The authors review local-level community forestry action in central Nepal and investigate the conditions under which local people can take collective action on forestry issues without outside intervention. Pandey and Yadama also review the relevance of social exchange theory and actor-system
dynamics theory as possible means for explaining the actions of the villagers in the case study presented.

The authors contrast community forestry action with typical community forestry programmes by placing the motivation to act with local people: “A community forestry action...is an initiative by a local community to protect and manage a local forest resource” (pg. 89). They also note that generally there are almost no external agents present.

The case study of the Hattishunde-Mahadevsthan area illustrates the authors’ notion that when action is taken spontaneously by the community, efforts are much more successful: rules are simple and easy to follow; compliance is very high; and decision-making is a group endeavour.


This study explores some of the ways in which socio-cultural, political, economic and environmental changes have affected West Kalimantan’s swidden cultivators’ resource management practices, particularly their management of forests and trees. It focuses on two forest villages, both having a tradition of swidden agriculture in old growth and secondary forest and a tradition of planting fruit trees around their longhouses and old longhouse sites. In both villages, common property rights, descent group common property and private property constitute the rights and claims to particular trees, products and land use.

The report focuses primarily on how and why resource rights and patterns of forest use have changed in each village over the past 75 years. In part, these changes are due to the two primary differences which exist between the two groups, apart from their different languages. First, their geographic locations relative to extensive mature forest and to roads, markets, schools and health services vary greatly. These differences in location have significantly influenced both the degree of commercial exploitation of particular forest and tree resources and the nature of the rights to these resources. Second, each has historically unique local experiences of the regionally significant political and economic events. These factors have helped to dictate the speed of the changes made to traditional practices.

The author discusses the need for an improved understanding of the responses made by swidden cultivators to a variety of socio-cultural, political and economic circumstances, in order that forest resources can be more equitably and sustainably managed for the future.


Peluso refers to the contradictions associated with the customary “custodial approach” to Javanese forest management and the new emphasis on “social
forestry”. She argues that the institution of social forestry programmes alone is insufficient if the principles of social forestry are not integrated into the entire forestry structure and if integrated rural repression is not replaced by rural development, which is directed specifically towards the poor. She further argues that if social forestry programmes are not directed towards increasing resource access to the poor, the forestry agency goal of improving the ecological stability of forest lands will not be achieved, due to the resistance of poor peasants who disregard agency-mandated forest management regulations. While major concessions in forest access rights for villagers have been made programatically, the structure of this access has not been changed, and must go through a forester. Such a structure leads to the village poor being left out, except as labourers, for a series of reasons: the short time frames of projects; the little village-level socio-economic data available to the forester; the continuation of “trees in the ground” evaluation criteria within the agency; the sociology of extension where the agent becomes closely allied with local elites; and poor villagers’ lack of necessary initial capital. The author concludes that a major step to overcome these obstacles is for the poor to organize to overcome local structures of power.


This paper analyses the recent expansion of trade networks of rattan in the province of East Kalimantan in Indonesia. The author argues that the removal of taxing authority of forest product trade from local leaders leaves little incentive for these leaders to continue their supervision of extraction. Furthermore, government forestry and military officials stationed in the province tend to be ignorant of local traditional law. What is lost in this situation is the social check on harvesting procedures which guarantees that they are ecologically sound. This reduction of effective social control, along with the following factors, has led to the currently expanding trade networks: improved transportation and communications (introduction of motor boats, building of roads into the forest by timber companies); changes in government policies (e.g. the government first banned the Chinese from upriver areas, which resulted in the Chinese hiring middlemen; then the government lifted the ban, resulting in the Chinese competing with their former employees); the timber boom (boom periods for certain forest products in the world market first introduced and stimulated a demand for luxury items in which rattan often remained the only cash source).

Peluso outlines the general structure of present-day trade networks in rattan. She goes on to describe the Government Plan for regulating rattan. This plan would attempt to put urban buyers and local rural cooperatives, which were originally established to handle rice marketing, under tighter licensing control while attempting to remove the middlemen from the trade networks. Peluso argues that the middlemen provide lower-level traders and harvesters services which are not adequately replaced by the government plan. These are: the extension of credit, adoption of a significant amount of the risk and support during household crises. In order to limit access to supplies of rattan, Peluso argues that a system of group ownership based on local social and economic cooperative structures be instituted with permits contingent
on compliance with sustained-yield management procedures. In addition, alternative employment opportunities should be created in the vicinity of rattan trade and collection centers to employ former middlemen (e.g. rattan plantations and first-stage rattan processing centers).


This paper describes how researchers worked with foresters in Java to develop new management systems responsive to both national objectives and the needs of the rural poor. These new systems reflected a move away from a paramilitary, technical orientation towards a community organizing approach. The authors first introduce the Indonesian State Forestry Corporation (SFC). They place its activities and evolution within the historical context of social conflict (between the state and peasantry) over access to forest resources (from the colonial period onward). The task of evolving a new management system first required an analysis of the decision-making process in the SFC. Hesitant willingness for change was expressed by higher-ups in the agency. It was hoped that by setting in motion a learning process within the agency, a process of change could be effected. Graduate students who were often junior members within natural resource agencies conducted fieldwork on the following issues: patterns of human-forest interaction; relationships between local people and foresters; views held by villagers and field foresters regarding the forest and forest policy; village social structure and its influence on patterns of forest access. This research found that most conflicts could be attributed to three factors: disputes over forest lands and tree tenure between forest villagers and state foresters; bureaucratic misconduct on the part of field foresters (including corruption, exploitation, and involvement in teak theft); and the failure of forest management policies to take into consideration diverse ecological and socio-economic circumstances.

Describing the problems encountered in the pilot project phase, the authors note that foresters focused largely on the planting of species which would guarantee the success of the project; that as a result the ‘new’ social forestry programme preserved a traditional, top-down approach, thus reinforcing farmers’ negative attitudes towards state forest management; that in many cases the choice of participating farmers was determined by their promise to succeed, thus leading to the exclusion of land-poor farmers from the project.

Despite these problems, the programme did succeed in influencing a conservative, forest management agency. It succeeded because: its development coincided with the onset of increasing pressure on the agency to become more responsive to rural needs; the research team was strategically placed and made responsible to the working group; effective channels to SFC’s policy makers were established for project findings; the donor agency committed itself to follow up the diagnostic phase with pilot projects.

This publication brings together three case studies on forest-based small-scale enterprises. The first study describes rattan production in Indonesia. The industry is characterized by limited processing of the raw resource and the absence of substantial government assistance. The study raises some important issues such as access to, and over-exploitation of, resources and the efficiency of governmental efforts to help the industry.

The second study describes the match industry in India. It examines the activities of household, cottage and factory-size business and assesses government policies that are designed to encourage the development of medium-sized enterprises.

The third study describes two sets of handicraft industries in Indonesia. One of these (rattan furniture and carved wooden furniture) is expanding while the other (painted umbrellas and wooden clogs) is in decline.

Campbell, in his introduction and conclusion, compares and contrasts the three studies and places them in a broader context. He identifies a number of common characteristics for FBSSEs: they are small and are often household-based; they are predominately rural and frequently seasonal; they are labour-intensive and use simple technologies; they require low capital inputs; they provide accessible ways of earning income for low income and socially disadvantaged groups; they provide direct benefits to the local economy; and women are prominently involved, often comprising a majority of the labour force. Campbell also identifies a number of constraints which seem to affect FBSSEs in general: little access to markets and competition for those markets; shortage of raw materials, financing and appropriate technology; changing market demand; lack of managerial and entrepreneurial skills; and a lack of organization which restricts effective use of available support services.


This article describes the importance of tree and other wild plant products in the subsistence economy of the Modo of southern Sudan. It describes how certain species are used and harvested for food (both normal and drought foods), fuel, fish poisons, hunting and farming equipment, bee hives, hut construction, clothing and medicine.


This case study examines shifting cultivation as a potential basis for more sustainable natural resource management in East Kalimantan, Indonesia. It con-
siders the process of change and development in the system of shifting cultivation practiced by the Uma’ Jalan Kenyah (a sub-group of the Kenyah Dayaks) over three decades, tracing them from their homeland, through governmentsponsored resettlement, to dispersal and formation into three new daughter communities. On the basis of quantitative data on land and forest use for rice cultivation, examined from all families in four communities, the author identifies trends in yearly hectarage cleared, land and forest preferences, productivity, and agricultural constraints. The data is also analysed to show the impacts of environmental, social, structural and technological factors, natural disasters and logging on selected aspects of the agroforestry system.

The four communities are compared in terms of population, land use, production and land tenure. The author finds that indigenous people contribute little to population growth in East Kalimantan; that each farm family needs from 15 to 40 ha of land to practice a sustainable form of agroforestry that will include maintenance of extensive areas of humid tropical rain forest; that the traditional system, though characterized by low rice yields, actually produces a great deal (including timber, non-timber forest products, a great variety of foods and medicines) and has important conservation functions; and that land tenure needs to be clarified and formalized.

The concluding policy recommendations include better control of the timber industry, acknowledgement of local people’s claims to their land, incorporation of indigenous knowledge into agroforestry development efforts, cessation of projects which increase Kalimantan’s population, and financial help for Indonesia from the community of nations to help with these efforts.


This publication describes the productivity of the forest resource, forest use history, present regulation, product markets, equity of income and forest product distribution, and the general socio-economic geography of three regions in South Asia: the central Indian tribal belt, the western semi-arid zone and the Himalayas.


This book offers a range of perspectives on forest management issues in Southeast Asia, with a focus on Thailand, Indonesia and the Philippines. It features 14 papers by 20 authors - over half of whom are from the region - and is arranged into three sections. Each section is introduced by Poffenberger who provides a useful overview of the context and content of the issues considered in the various chapters. Part I of the book is primarily historical and describes land tenure and management systems found in the region; it also examines the role of government. The second portion of the book is devoted to methodologies, especially those for facilitating participatory programmes. The final section features case studies from social forestry projects throughout Southeast Asia.

This paper presents a general outline of the management strategies of the Kayapo Indians of the Brazilian Amazon, showing how they utilize, conserve, and even create tropical forest patches, typically thought to be “natural”. Long-term transplanting and selection of plants suggest semi-domestication of many species. The Kayapo view forest management as an integrated system of plant communities. The paper also gives a typology of Kayapo folk ecological zones, a partial list of the most important tree species planted by the Kayapo. It provides biophysical and social descriptions of the numerous types of management areas in the forest of the Kayapo. These include: forest patches where planting occurs on prepared soils produced from termite and ant nests mixed with mulch; managed secondary succession of old field and light-gap sites; transplanting of species into forest fields located near campsites along travel routes; secret medicine plant plantations in the forest; and “rock gardens” which are areas around exposed rock outcrops providing a variety of microclimates in close proximity, and exploited by the Kayapo for speciality plantings.


Poulsen first argues that researchers and foresters, by evaluating the importance of forest products according to commercial criteria, have placed too much attention on timber and certain commercialized forest products (e.g. gum arabic), to the detriment of certain “minor” forest products which may be much more important to rural households. This is followed by brief descriptions of the importance of forest and tree products in supplying fodder, fibre, food, and drugs and chemicals to local communities.


This publication focuses on defining the socio-economically relevant characteristics of trees and how they can facilitate tree species selection for different users and under different circumstances. In this context, the author stresses that attributes of trees are socially defined by people and therefore attributes will change according to differences in cultural and economic circumstances. He defines five major ways in which a tree can be inappropriate in a particular community: inappropriate function, inappropriate market orientation, inappropriate land requirement, inappropriate labour or skill requirement, and inappropriate capital requirement. He goes on to argue that tree growing technology provides the link between socio-economic attributes of tree users and biophysical attributes of trees.

Raintree presents a decision algorithm for matching technologies to users and trees to technologies: the process starts with the identification of the user and his/her socio-economic context; a technology is then identified to match the
client and ideotype specifications of needed trees are established based on the technology, after which trees that best meet these specifications are chosen.

This publication also explores the “Great Eucalyptus Debate”, as an example from which lessons can be learned on the various ways in which trees and tree planting practices may be well or ill suited to their socio-economic settings. A framework is presented for a user perspective approach to choice of trees and tree planting practices.

Four comprehensive appendices complement the main text: a diagnostic checklist of factors potentially associated with the success or failure of tree planting efforts; the range of tree planting options open to project planners and implementors; reference materials supporting the matching of tree planting technologies to users; and an indicative list of tree specifications for a broad range of tree growing technologies. The publication concludes with a 19 page bibliography.


Rambo argues here that the continuing use and/or adoption of shifting cultivation after exposure to permanent field cultivation is a rational decision based on the highest output per unit of labour. Trees serve as nutrient pumps, and fire serves to clear unwanted vegetation, alter soil structure, sterilize the soil, and increase availability of nutrients. Trees and fire thus substitute some of the labour used in permanent systems. In many cases, the increasing labour demand associated with weeding has been found to be an important factor behind a switch to shifting cultivation. The author concludes by providing a number of strategies for agricultural improvement that are more likely to be accepted among shifting cultivators.


Rhoades argues that farmers are not passive and tradition-bound, but are active experimenters, and gives examples of varietal testing, potato storage, and agricultural system innovations by local farmers which have been adopted and pushed by Western researchers. He points out that the major difference between the experimental approach pursued by local farmers and agricultural researchers is that while researchers prefer to study the nature of problems, farmers are much more interested in finding ways to solve those problems.

The author discusses the negative ecological and economic consequences of the attempted transport of European agricultural and natural resource management techniques into West Africa. Richards states that colonialists failed to understand on the one hand, the inappropriateness of their own principles of environmental resource management, and on the other, the effectiveness of long-standing practices in response to the specific local environment. The author basis his arguments primarily on the experience of Nigeria and Sierra Leone, but also includes references to experiences in other parts of West Africa. Chapter 1 of this book is a critical examination of the developmental policies and agricultural research agendas taken up during the colonial period. Chapters 2 through 4 present convincing arguments supporting the notion that West African farmers through their own form of active experimentation have laid the foundations for productive and ecological farming systems in a number of different ecological zones. Chapter 5 addresses the question of how particular aspects of the internal organization and management of agricultural development agencies have historically led to these agencies often doing more harm than good.

The author concludes by outlining an alternative model relating agricultural science and development. “Indigenous science and technologies” are the proper foundations on which to improve forest management and pastoral and agricultural strategies. The author stresses the importance of involving farmers directly not only in responding to expert-created “improvements” but also in actual formulating the research agenda.


This brief article examines the concept of participation in development programmes. The author argues that all too often this notion is invoked with little consideration of what the term really means. Rist points out, for example that typically “participation” comes down to trying to get “the highest level of participation of the people implementing our solutions to their problems” (pg. 30). This frequently results in an impasse because the technical solutions of outside specialists may not be culturally appropriate and thus, “local people do not understand how to participate in them” (pg. 30). Rist then outlines an approach taken in an agro-ecology development project in Bolivia which addressed this problem.

This project began with the premise that the best strategy was to help local people resolve their own problems in ways consistent with their own rationality and philosophy. To achieve this, project staff devoted considerable time to living in the community and documenting local, indigenous knowledge on a wide range of topics from animal husbandry to agricultural practices. This information not only made project staff more keenly aware of problems, but allowed for the designing of a project which fit local conditions.


Women are largely responsible for many of the tasks associated with agroforestry, such as planting, tending, gathering, harvesting, processing, and using woody plants; all of these tasks are performed in addition to the other roles they play in maintaining the household. Rocheleau argues that given the central role women play in agroforestry systems, future research efforts designed to support extant or implement new agroforestry projects must address the role of gender. Specifically, she states that the success of such projects rests on their ability to “reconcile or accommodate the conflicts between men and women and between classes” (pg. 149).

Rocheleau also points out that any agroforestry system is a reflection of existing gender divisions of labour, skill, responsibility, and control that are part of the larger society. Thus gender is the basis for differences in “legal status, use of and access to space, [and] type of activity” (pg. 150). These differences, in turn, have implications regarding who is able to plant and manage which plants when and where, as well as who will ultimately benefit from them. The participation of women in agroforestry although usually distinct from that of men, is generally complementary.

A ‘land user’ perspective is suggested as a useful approach to the development and implementation of agroforestry projects. This perspective necessitates consideration of a broad set of criteria including not simply cost and benefit, but also need, preference, and multiple use; all of which must be weighed against available resources, required inputs, risk and potential yields. Women can be explicitly incorporated into such an approach as a user group.


This article reviews the factors behind gender differences in access to and control over tree products. Besides the differences in women’s direct access to forest resources compared to that of men, the author also considers differences in indirect access, such as that to productive resources necessary for productive use of the forest. The author presents examples of gender differences in legal status, de facto rights, “spatial niches” in the rural landscape (which, for example, for women are usually close to the compound and village common lands), and the division of labour, expertise, and responsibility. These are all shown to affect the relative access to forest and tree products. The author concludes with a presentation of important development policy ramifications of the material reviewed in this paper.

This paper presents an overview and outline of methods and techniques for the outsider to learn about local forest management systems and their evolution; it also presents methods and techniques for stimulating an active involvement of the local community in all phases of the project. The topics covered include: mapping techniques to understand important spatial relationships, group interviews, household interviews, individual interviews, and techniques for recording local history.


Rojas argues that women are often the major knowledge-holders regarding the forest, as well as being the major producers of goods extracted from them. It follows then that extension programmes should be directed specifically to women with prior attention to the distribution of access rights within the community. During initial observation of a community, researchers should agree, given the concerns of the project, on a common definition of the household for the particular area; they should ascertain who performs particular household work tasks; what livestock are kept and who has responsibility for the livestock; what crops are raised, who performs which agricultural tasks. They should also obtain a clear understanding of the question of tree and agricultural land tenure; they should learn about available areas of natural vegetation and who, when, and how they are used.

The author cites Ruth Dixon (*Restoring the Balance: Women and Forest Resources.* Rome: FAO, 1987) for a list of situations in which a “women-only” project may be required: when there are strong taboos against unrelated males and females working together; where the effects of past discrimination need to be overcome; where many or most households are headed by women; where women specialize in tasks that could be made more productive with outside help; where women request a measure of self-reliance to avoid conflict or competition with men.


This article traces the shift in focus from “forester as revenue officer and policeman” to the view of “forestry for development”. The author discusses the problem of the agrification of forestry, and cautions against the overestimation of the impact of social forestry on rural conditions: rural development arises when some threshold of diverse and complementary conditions is passed. He argues that the strategic combination of complementary activities (e.g. agriculture and social forestry) has a larger effect than the sum of its parts. Stressing the importance of the structure of the product market, he discusses the value of land and tree tenure rights in relation to market control. Noting that the relations between the Forestry Department and the village in social forestry projects are often unequal, he argues that third-party mediation mechanisms are therefore essential to the stability, productivity and credibility of these relations. He further notes that sub-national levels of general governance and court systems are potential third parties for social forestry.

This paper is concerned with the problems and potential of increasing the security of local villager and state claims on forest products, a necessary task in order to optimize levels of public and private investment. The author argues that the declining condition of the uncultivated half of India is a dramatic demonstration of what happens when no one is sure enough of his rights in land to forego immediate gains for investment. There are large disparities between the conditions in which common lands are currently used and those that would promote investment of sustained growth in their productivity. He also argues that the “reduction of these and related disparities is the most fruitful focus for formation of a policy framework for the uncultivated half of India” (pg. 5). And he goes on to state that “if decision-making is to produce appropriate investment response to policy, then those with formal authority and those with actual field control must share sufficient common interest to comply with a unified set of decisions” (pg. 12).

Using a framework similar to the one briefly described above, Romm analyses the “security of claims” problems associated with social forestry (pgs. 14-17), range development (pgs. 17-21), and watershed management (pgs. 21-24). He presents a number of suggestions for policy changes to improve such programmes as well as others which concern common lands.


In this article, Romm assesses social forestry projects within a benefit-cost framework and argues in favour of condensing benefits into two “quantifiable” forms: savings (of future forest land yields that would be destroyed in the absence of the project) and gains (in income to villagers beyond those attainable in the absence of a project).

He identifies projects that will lead to higher benefits: projects that are located farther from alternative sources of forest produce (greater savings in labour time), in areas with good agricultural land, with closer access to roads and towns, in less densely populated areas (higher opportunity costs of labour), and where substitutes for forest produce are more readily available (e.g. kerosene).

Romm argues that since forest departments and villages have different objectives and resource constraints, it is necessary to calculate benefits and costs from both perspectives: the distribution of benefits is an important factor for the sustainability of the project.

Sarin describes the community forestry experience in two districts of Madhya Pradesh in India: Rajgarh District where there was a ‘Panch Van’ Scheme (social forestry on community lands) and the Bilaspur District where there were social forestry programmes under a Ford Foundation project. The author first describes the status of the forests, forest use and management, and state forestry policy in Madhya Pradesh. Shorter cases are presented describing the community forestry experience of eight villages. The author concludes by presenting an analytic framework in which to assess the constraints facing or the potential for success of a community forestry project. This framework is based on the assessments of local leadership and motivation of villagers, economic status and productive potential of the village, and the present density of forests.


In this article, Schieffelin describes the use of the forest by the Kaluli in Papua New Guinea, including agricultural techniques used for particular crops and ecological zones; how agricultural strategies determine settlement location and movement; and the structure of resource control in the area. The author stresses the sensitivity of the local lateritic soils to rainfall exposure, which causes leaching and sealing of soil surface. He argues that the movement of settlements and the application of a swidden system by the Kaluli, in which they plant under the forest canopy first and then fell the trees on top of the planting (with no burning), are necessary adaptations to this ecological condition. He found that damage to crops was minimal (less than 5%), since felling occurs when crops are widely spaced shoots with tree surface area actually touching the soil surface (supported by branches and such). The benefit of this approach is that the soil surface is never fully exposed to the hard downpours that occur throughout the year. Both of these aspects (mobility and felling trees on crops) of the Kaluli production system are viewed as primitive by outsiders. The author traces the impact of a series of outside initiatives to reduce Kaluli mobility and introduce “improved” cultivation practices.


This paper describes the experience of participants in a training workshop related to the ENDA Zimbabwe Trees Project, a project directed at village-level planning of tree resources enabling people to make their own response to their perceptions of woodland problems. The project uses a variety of approaches aimed at fostering a dialogue between the community worker and the community. The community workers are resident farmers well known in their community. The local situation is analysed and a management plan developed through appraisals and village meetings facilitated by the community worker. Very few outside materials are provided: seeds are provided by villages with some fencing supplied to protect trees in village nurseries. Central to evaluation and planning of the projects are the village-based researchers, local residents with some secondary education. Their role
is: to assist in the collection of information for the research projects; to provide feedback to the community on results of the research, to carry out community evaluation of project activities and to support the community workers in village-level planning for woodland resources. Suspicions arose among the villagers regarding the motives of the researchers (e.g., fear of arrest if they admitted cutting wood; fear that they would be forced into payment at a later date).

Three RRA techniques were introduced at the workshop: walking transect and aerial photograph analysis (aerial photographs were introduced to get a different and wider perspective than that normally recorded on the ground); seasonality diagrams (for local classification of seasons, tree fruiting period, browse intensity, and fuelwood use; these diagrams were compared to nutritional and marketing seasonality); preference ranking (to evaluate farmer preference concerning species choice). Community-level feedback was obtained by encouraging participation in group discussions and through stories, drama, pictures and posters, songs and dances).


This paper presents an approach for ranking household wealth using criteria identified by farmers themselves. The first step is to generate insight into the local conception of wealth. The second is to provide a separate, farmer-based classification. These steps were performed through group interviews.


This brief article describes the process of land use change occurring in the Kanyakumari District of Tamil Nadu, India. It describes how the spread of tall perennial crops such as mango, banana, cashew, coconut and rubber has been fueled by the shading effect of these tall crops on neighbouring parcels of rice and tapioca. The author discusses the impacts of this conversion on the economic situation of the poor (fewer jobs available, given the lower labour demands of these perennial crops).


This paper presents four case studies of fodder farm projects on common lands in the Kheda District of Gujarat, India. Generally, the purpose of these case studies was to better understand the social and political processes that affect the success or failure of community initiatives to improve communal land productivity. Each study provides a description of the history of the project as well as the conflicts that arose and how they were dealt with. One of the projects described was the continuation of another; for the four to five-year period covered by these two consecutive projects, a series
of benefit flow data is presented. The case studies demonstrate the importance of the role of the community leader: it is often the person fulfilling this role who absorbs the set-up costs, and establishes among the community members the norms of fair play, which are necessary to sustain collective action.


This is a reprint of an undated paper written by a district officer in Malindi sometime in the early 1970s describing the political repercussions of one ethnic group planting trees on land owned by another. Kenyan land policy affirmed the land rights of the Arab landowners in Malindi with no land reform programme initiated.


Sharma and McGregor argue that agroforestry projects ought to be evaluated not only by strictly economic measures (like profitability) but also in terms of their ability to meet socio-economic goals, such as the distribution of the income they generate and the equity of that distribution. The Orissa agroforestry project described here, like many currently being developed in India, is designed to serve two main purposes: provide for the basic food, fuelwood and timber needs of the poor and to provide employment and thus adequate income to raise the rural poor above the poverty level. Using this case study, the authors undertake such an analysis using computer models and statistical techniques. In their conclusion, the authors note that the greatest net socio-economic benefits are realized under slightly different circumstances than strictly financial ones.


This article provides an overview of indigenous forest management systems in dryland Africa based on a comprehensive literature search. The author argues that “the tenure and authority regimes which once governed the successful use of the forest are also those that govern the use of farmland and all other resources” (pg. 152). He further claims that it is the division of management responsibility among various governing bodies that has been the source of many present-day problems.

Shepherd points out that indigenous management and European management systems differ markedly in their goals. Indigenous systems frequently emphasize management of the trees as well as the space they occupy including grass, water, and other resources found there, whereas European management is generally more narrowly focused. Managers in
traditional systems were not only capable, according to Shepherd, but were doubly committed to success by their own dependence on forest resources and because they were often related to those to whom they were responsible.

A great deal of blame for current forest problems rests with the removal of control over resources from local hands where rules were often flexible and highly responsive to local conditions. The article also highlights the importance of ownership, arguing that people are unwilling to invest effort if their ability to benefit is not assured.


This paper discusses some of the main issues with which forestry policy makers must contend. Problems occurring at the international, national and local levels are considered. Most of these are associated with balancing differing and often conflicting needs for, or demands on, forest resources. The author points out that most of the former European colonies throughout the world continued to apply colonial forest policies for some time before beginning to question them. It is in this process of re-formulation of policy that social forestry can shift the focus away from industrial forests which are managed to produce maximum revenue. The aim is to implement forestry policy which helps meet the needs of the small farmer and his or her family.


Most rural areas in the Third World are undergoing rapid socio-economic change: decrease in economic autonomy and self-sufficiency, increase in population leading to increased pressure on resources and/or out-migration. In order for social forestry to succeed, it must operate in rapidly changing conditions: for example, changes in social institutions and resource access should be planned to take place well within the growth period of trees. Key variables to be taken into consideration include: land tenure, common property resources, the sexual division of labour, social stratification within the village, and village-level institutions.

Concerning the breakdown of CPRs, the author notes that they “function best where they are shared by individuals who are relatively socially undifferentiated” (pg. 8). CPRs tend to erode more quickly when they are located where state and district power is strong. When the value of the CPR rises, so does its vulnerability. The greater degree of wealth differentiation among a CPR-user group, the more likely its form of management will change.

In discussing development agency/villager relations, Sherman contrasts two administration styles presented in the development administration literature to describe the behaviour of members of administrative agencies: the bureaucrat and the professional. The bureaucrat functions within the framework of a detailed set of organizational regulations and is subject to close hierarchical supervision while the professional solves problems as they arise through the application of advanced analytic skills to detailed firsthand knowledge of the local circumstances. Bureaucratic structures are seen as most appropriate when the organization’s staff perform their roles in a simple, stable and therefore reliably predictable environment.

The author goes on to discuss the concept of what most determines the agency function. Two contrasting schools of thought are outlined: the administrative ecology school (including Neo-Marxist and dependency schools) which focuses on outside forces/interest groups; and the administrative engineering school (e.g. Pressman, J.L. and A.B. Wildovsky. Implementation. Berkeley, California: University of California Press, 1973) which focuses on internal agency organization. The administrative engineering school most often argues that for an agency to deal with change most effectively, it must loosen bureaucratic controls to allow greater leeway for professional discretion. The administrative ecologists would counter that whatever the formal arrangements adopted within the agency, the substantive quality of performance will be determined by the ability of interested groups to bring effective pressures to bear.

Returning to the original question of villager/agency relations, the author argues that the administrative ecology school conceives agency functioning at the local level as an outcome of the position of local staffers within, and in relation to local society; on the other hand, the administrative engineering school views agency functioning in terms of organizational characteristics, the tasks imposed on local staff, the organization’s style of operations, etc. Calls for “debureaucratization” must be tempered with the realization of the scarcity of skilled professional staff in many agencies. Without clear guidelines in policy and in organizational regulations, the use to be made of official authority in a given field becomes the object of bargaining between agency staff and elements of the local public. Moreover, the generally accepted view of over-bureaucratization is less than fully supported by the results of research carried out at the local government level.

Finally, the author presents what is called the “policy-implementation approach”, which treats the interaction of organization and environment as differing with respect to the character of the policies to be implemented. The work of Cleave is cited as an example of this approach.


The Garhwal Himalaya region of India is the setting for the re-emergence of a form of traditional conflict resolution strategy originally known as satya-graha. The development of the Chipko or “Embrace the Tree” movement is
reviewed in this article which outlines not only its unique qualities but its potential significance worldwide. According to the authors, the Chipko movement has its origins in the political movement led by Gandhi. Although this Gandhian philosophy is typically viewed as non-material, this article argues that in both the historical and contemporary cases this strategy has been effectively used to address the material conditions of life.

Chipko, like previous forest satyagraha movements, should be seen as a cultural response to forest destruction. It has been used in the Garhwal both to protect forests and preserve culture while securing livelihood. Notably, it is the women of the Garhwal who are most actively involved. Chipko differs from earlier movements in its ecological basis; it developed from recognition of serious ecological degradation in the hills which was undermining village food self-sufficiency.


This paper highlights the existence of a gap between social forestry policies based on community management and the outcome of a programme designed to implement it. The authors analyse the results of an ongoing social forestry programme in the Kolar district of Karnataka, India. In their view, thus far, rather than achieving its stated aim of creating forests for the benefit of the community, it has perversely aggravated the problems it was designed to resolve. This negative result is attributed to several factors including the placing of too great an emphasis on private farm forestry, rather than on communally held forests; furthermore, poor choice of the tree species used in the project contributed to worsening community problems related to fuelwood price and availability as well as to labour displacement. The authors also point out that the lack of attention to the types of trees grown or to who grows them exposes the erroneous assumption that if more of a particular commodity - in this case trees or tree products - is available, it will automatically be accessible to more people. This perspective overlooks the workings of a market economy.


The authors first argue that the loss of forest cover in India over the past 35 years is due to agricultural expansion and to the adoption of the British model of forestry which alienated large tracts of forest from villages to be managed by the state. They invoke an idealized, cooperative model of village life to argue against the concern that differentiation in resource access and wealth limits the potential for successful social forestry. The article presents the history of “social forestry” in the State of Karnataka of India to show how the monospecific spread of eucalyptus in social forestry projects has led to significant growth in plantation acreage but to a self-fulfilling failure in cooperative development. (Eucalyptus, chosen for fast growth
and low palatability to livestock, requires no/little cooperation among vil-
lagers since it is not palatable to livestock.) Moreover, given the high
industrial pulp demand for eucalyptus wood (the pulp price is much higher
than the firewood price), eucalyptus is a very profitable cash crop, com-
pared to agricultural crops. Rich farmers have transferred significant
amounts of agricultural land to eucalyptus plantation leading to a situation
where grain prices have risen, while work opportunities for the poor have
deprecated.

Resources of Land: A Case Study in West Bengal. Case Study no. 6.
Anand, Gujarat: Institute of Rural Management. iv + 49 pgs.

In this study the authors present an overview of the privatization of common
pool resources (CPRs), in this case land. The processes and consequences of
privatization policies are examined in detail through a case study from the
State of West Bengal, India. The authors contend that although the state
government did a good job of acquiring and leasing out land, design and
operational problems limited the overall success of the programme.
However, privatization remains a policy worth pursuing in the view of these
authors.

Under the policy, two programmes were launched. Operation Barga and the
patta-land scheme. Through these programmes, allottees were given land,
often in contiguous blocks, previously considered wasteland. Typically, the
allottees used the land for growing eucalyptus trees for the local market. The
Forestry Department assisted growers primarily with technical information
and saplings. Among findings from the case study are: such programmes do
help reduce poverty by providing participants with new opportunities to
increase their income; there is a need for government intercession in the
local market to assure adequate prices to tree growers; and degraded CPRs
can be made productive through privatization. The authors conclude that
programmes for privatization of CPRs of land supported with appropriate
aid to land allottees can be a means to realizing “the goals of efficiency,
equity, and sustainability in CPR management and averting the ‘tragedy of
the commons’” (pg. 47).

177. Sitaraman, S. and Sarin, S. 1980. “Experiences in community forestry:
Uttar Pradesh”. Chap. 8 in Community Forestry Management for Rural

This report provides an overview of the social forestry programme in Uttar
Pradesh (India) followed by three short case studies: two of which are about
private plantations and the third is about a community forest. The authors
present a set of indicators which distinguish the two private plantation pro-
jects from each other and which, they suggest, were important in giving one
of these projects a significantly higher “demonstration” effect.

Devin-Adair Company.
An early argument for the greater incorporation of trees into agriculture and against the prevalent practice in the U.S. at the time of disregarding the importance of trees both as crops and for the ecological services trees provide. The bulk of the book consists of descriptions of the uses made of specific trees (genera or species) around the world including: the mesquites, the mulberry, the chestnut, the oaks, the walnuts, carob, pecan, and the hickories. The author concerns himself mostly with trees which at the time were not viewed as agricultural crops (e.g. non-orchard trees). Although examples are incorporated from around the world, most of the examples and discussion concern temperate-climate tree crops in the U.S. A large part of the book is concerned in particular with nut trees.


This paper critiques the dominance of the outsider-intervener in problem definition and implementation design in many present models of “participatory development”. The author describes two alternative approaches used in a needs assessment survey associated with the Milne Bay Province Project in Papua New Guinea. The first approach (referred to as “training and human development”) involved the training of group leaders from the community in problem analysis, leadership and planning. Projects which required outside experience were not funded until there was success in totally self-reliant development efforts. The second approach (referred to as the “extensive approach”) regarded situations where outside investigators visited as many villages as possible to obtain a broad overview of the needs and concerns of the communities via open-ended questioning. This latter approach is more useful for a province-wide needs assessment and problem analysis and may not necessarily lead to community-initiated development.

In summary, the author notes that no matter what approach is used, the goal of full community participation requires: that government agents be aware that it is not their responsibility to provide all of the answers and inputs; that existing organizations and institutions be incorporated and actively involved in the process; that organizational systems that are developed be appropriate to the community; that an extension person live and work with the target groups, etc.


This manual provides a guide for extension agents to encourage participation and involvement by local people in group sessions. Topics covered include: initial planning of and preparation for meeting; methods to maximize involvement of all participants; and ways to establish a proper atmosphere for group activities (seating arrangement, introducing topic of concern, style of address, etc.). The suggestions provided are useful for working with groups at any stage of a project. There are case studies and exercises to illustrate and reinforce the main points and suggestions on how to use various tools such as pictures, drama, and audio tapes.

The author compares eight different cases of induced changes in CPR management in India in order to identify those institutional factors which were major determinants of “success”. The rules found to be most important for proper re-management of CPRs are those which relate to securing the group’s claims to the particular resource. In most cases, this takes significant legal and bureaucratic support. In addition, the establishment of use regulations was found to be very important in situations where demand exceeds supply (very common in situations where villagers have access to marketing outlets). Different levels of complexity exist concerning use regulations (and therefore costs of management/enforcement). There can be no privatizable benefits but significant collective benefits. Distribution can be by household quota with collection and guard duty performed by household labour. Common property products can be sold at a price above the marginal price of production but below the going market rate with the proceeds used to pay for protection and management. The second institutional type works reasonably well in situations where there is an equitable distribution of land, needs and labour. Pricing mechanisms often can lead to situations where common property products are sold to urban markets and the poor switch to lower quality but still available substitutes. With a low level of external involvement and a resource base which is under heavy pressure, a strong local organization and leadership is required to avoid open access. In situations where external involvement for capital investment is required, flexible, more sophisticated local institutions that can develop and enforce a number of different types of rules are necessary.


This study is an in-depth analysis of two Nepalese communities, revealing how issues of tenure and recent immigration have a direct impact upon the success of community forestry initiatives.

The people of the Terai lowlands, at the foot of the Churia Hills of Nepal, have evolved highly differentiated systems of land and tree tenure in keeping with a complex system of caste and communal rivalry. The ownership of trees in the Terai is regarded as a sign of prestige and an investment in the future. However, in a region with high levels of landlessness and few alternative sources of income, tree ownership is heavily dependent upon the perception of secure tenure. Smallholder and tenant farmers are unwilling to grow trees on land that does not belong to them, preferring to exploit what little natural forest remains.

This study examines the legal and economic constraints facing tenant and landlord alike. As well as providing a solid body of research into forest product user groups, the report suggests how tree-planting can potentially
be fostered on common or reserve lands and in the vicinity of village ponds.

A further objective of the study was to explore, in a Nepali setting, use of the rapid appraisal methodology designed by J. Bruce in Rapid Appraisal of Tree and Land Tenure (see entry 29). Bruce’s concept of tenure niche (a socio-ecological concept used to describe and discuss a variety of options, opportunities and conditions for the use and management of land and landed resources) guides this study. The chapter on findings discusses Bruce’s three broad categories of tenure niche: 1) private holdings (trees as wealth, tenant farming and tree tenure, agroforestry, the transfer of private tenure, rules of tenancy on private holdings, increased tree-raising on private holdings and landlessness and treelessness); 2) commons (village forests, wastelands, ponds); 3) government reserve (in the Churia Forest). The authors add a fourth category on gender and age issues in the Terai (agricultural labour, domestic activity and inheritance).


In this report, the authors argue that ‘people’s participation’ has come to represent two diametrically opposed meanings in political discourse: participation as a way to control people, and participation as a way for people to gain control (power). Based on the experience of the Panchayat Development Programme Planning Project located in the Palpa District, they argue that the proper goal is to provide ‘critical awareness’ or ‘knowledge for action’ to people without infringing on their self-organizing capacity, without making them dependent on services a project can offer. They make the connection between poverty, insecurity, and individualization. Recognizing the need to develop self-sustaining processes, the goal of the project was to create an atmosphere during village workshops in which assessment of problems and opportunities was to be more important than the perceived “spoon-fed” benefits from the outside. Under the prevailing government-run extension system, people cannot participate in problem-analysis, decision-making, and implementation; they can only analyse whether the programmes being offered fit in with their communal or individual situation. The authors note that mid-level staff (rangers, overseers and junior technicians) are the ones with daily contact with villagers. These relatively young staff persons with a technical background need to be retrained to open up the opportunity for mutual learning. Emphasis is placed on the extension agent to work towards a product which is based on common efforts (e.g. with villagers); this is stimulated by brainstorming sessions on specific problems. Initial contact with the villagers concentrates on the identification of problems at the village level with brainstorming about solutions, and without any discussion about outside resources which may be available.


This is a series of short writings comprising Part 3 of the volume Farmer First. Each entry is written by one or more of the authors named, and each looks at “practical ways in which farmers can participate in agricultural research, especially research on-farm” (pg. 109). The topics addressed include: a rationale and description of various types of on-farm research, an examination of the farmers’ role in technology development, descriptions of methods for working with farmers during trials, and ways to organize groups and workshops. These issues are covered through case studies and examples from a wide range of geographic locations including: Indonesia, Bangladesh, Brazil, Peru, Colombia, Zambia and Kenya.


This document presents a technique for analysing community forestry problems and designing modified or new community forestry institutions. The analytic technique involves the use of a four-part model: 1) attributes of woodstock goods and services, of the communities that control and use woodstocks, and of rules and institutions of governance and management of woodstock resources, goods and services; 2) incentives for different classes of actors created by the above-mentioned attributes; 3) patterns of interaction among individuals when they implement their strategies; and 4) the impact of interaction patterns (outcomes) on woodstock sustainability, equity and efficiency of production and distribution of goods and services; and viability of woodstock institutions.

The framework is based on the concept that all institutions, from informal village-level to more formal project and governmental institutions, work by sets of rules of behaviour. If expectations are not being met by any of the groups involved in community forestry, there may be a misfit with these rules. These rules must be understood in order for there to be success in project implementation.

Two other major points come out of this institutional approach to understanding incentives in community forestry: the need for careful attention to the diverse economic characteristics of trees; and the importance of understanding how different tenure rules create incentives or disincentives for people’s participation.

The publication presents case studies of four projects in Niger to illustrate the use of the methodology. All four of these projects were either initially designed or modified to involve local populations to some degree in woodstock management.

Thomson argues that foresters need to be retrained and given the resources to make the transition from resource cops to successful extension agents (learning the arts of listening, communicating and working with people). He characterizes the traditional woodstock management by Sahelian foresters as consisting of two activities: the ineffective and inequitable enforcement of forestry regulations on personal harvesting; and the management of plantations operated by forestry personnel. The “village wood-lot” fallacy is seen as resulting from the unexamined assumption that villagers share the perceptions of foresters; a management opportunity from the forester’s perspective looked like a highly risky investment from the villager’s perspective, for political reasons. Thomson stresses the importance of establishing clear, durable land and tree tenure, and argues that many Sahelian communities lack both rule-making capability and rule-enforcement capability for local political reasons. In these cases, if making and enforcing resource management rules depends on the willing consent of each and every person affected, locally-initiated collective efforts become practically impossible to sustain. Some outside intervention is necessary, but outside government cannot provide daily supervision. Therefore, attempts must be made to establish viable and effective local village governments. Thomson goes on to argue that tree tenure must be localized (from the State) to the village or individual levels. Although this changes the incentive structure to control exploitation, such changes must be made consistent with existing “effective” land tenure rules.


The author discusses the use of ligneous species as forage, as well as the incorporation of these species into grazing systems for other purposes. They can be used to produce other necessary commercial and subsistence products (such as fuelwood, construction materials, human food and fibre, etc.), as well as to provide “service” type benefits (such as shelter and nutrient recycling).

A major portion of this paper consists of a review of the productivity and nutrient content of important fodder species. It provides brief descriptions of new Western-style management approaches for integrating trees into forest grazing and plantation (coconut, rubber and cashew) grazing systems. It provides a technical review of the literature concerning overstory-understory relationships.


This article describes a pole production and mill project which began as a reaction against the draconian thinning approach to forest management.
adopted by the foresters of the Bureau of Indian Affairs. (This had been introduced to increase the production of usable boardfeet.) The project has three goals: to utilize the present dense stands of lodgepole pine, to provide employment and to make a profit. The importance of the pole cutters as a political force led to the continued reliance on labour-intensive techniques limiting the purchases of equipment that would increase productivity. There were numerous cash flow problems which disappointed the council and labourers alike. These were partially resolved with the hiring of a new manager. However, as the project history makes clear, the resolution of one problem only leads to another: flexibility and a continual process of problem solving are critical for success.


Efforts by the British colonial administration to regulate grazing by Gaddi herds in the Punjab region of the Indian Himalaya are analysed in this short article. The British codified the pre-colonial land tenure system making it much more rigid. This resulted in an increase in conflicts between farmers and shepherds over grazing rights and control of non-agricultural land. The author claims that in temperate mountain environments regulated by colonial regimes, “inexorable processes of soil erosion and pasture degradation have resulted from interactions between the pastoral economy and colonial institutions” (pg. 17). The example used to illustrate this argument is the decline of forest and pasture associated with the livestock economy.


This paper traces British reactions to and involvement in deforestation of the Western Himalayas in the nineteenth century. A number of different factors contingent on colonial conquest of this region led to an increased extraction of resources from the formerly immense, old growth forests in the region. These factors include: the opening up of the region to international agricultural markets spurring the expansion of some particularly profitable crops by local cultivators; colonial strategies to intensify this trend (e.g. taxation policy); significant land speculation, and the establishment of plantations in the area by the British colonialists; mining operations using charcoal for smelting; increased population growth rates brought about by pacification; and improved transportation networks between urban areas and the highlands leading to the commercialization of wood and charcoal. The building of the railroads beginning in the mid-1850s greatly increased the scope and magnitude of deforestation, both directly through the railroad industry’s demand for sleeper car timber and wood-fuel as well as the railroads’ effects through the factors listed above. The military demands of World War I are cited as another important historical event which greatly expanded extraction in the area.

The author goes on to describe briefly the development of the various harvesting and marketing arrangements with private contractors developed by
the Forest Department. The purchase of rights to harvest and market timber was very much sought after by powerful merchant castes and by religious communities. Each private trading operation was controlled by a particular kinship group closely cooperating with other contractors from the same caste or religious community. Tucker notes that with the expansion of transportation networks, along with out-migration of local young men, contractors increasingly used in-migrant labour which could be more easily controlled.


The authors argue that participation in development needs to be “optimized” not “maximized” since there are not only benefits but also costs involved. They follow an Olsonian-type of analysis concerning the costs and benefits of collective action (participation) in analysing the preference of farmers for various forms of irrigation control governance. After presenting the history of irrigation control administration in the area, they note that Chambers, analysing the present situation argues that a farmer committee-type structure of irrigation management had not functioned adequately. Chambers’ explanation for this failure is that water management tasks require timely and definitive decision-making. He argues for the designation of an irrigation headman with executive powers but accountable to the users. The authors further note Chambers’ argument that scarcity of water and the need for its equitable distribution generate social pressure to have specific rules and authorities.

The authors present a theoretical proposition: “farmers’ net benefits from participation in water management are likely to be greatest over a “middle range” with regard to water availability” (pg. 30). Involving farmers in decision-making and management under conditions either of surplus or of scarcity is more likely to lead to conflicts and to have more costs than benefits. Thus the users will have little or no incentive to engage in water management at either extreme.

The authors present an empirical analysis for a sample of irrigation areas of the Gal Oya Left Bank. Generally in districts where the water supply is considered adequate, farmers favoured control by a government officer; in cases of significant shortage, a water headman structure was favoured; in intermediate situations, a committee was favoured.


The authors contrast the agrarian situation in two upland villages of central Java - Merden and Bunder (located on poorer and steeper land) - in terms of resource access (land, labour, and off-farm income opportunities) and income. They argue that the choice of tree species and their spatial distribution can be explained in terms of the characteristics of the trees and of resource access and income characteristics. They further
argue that with decreasing size of holdings and increasing stress on household resources, trees are distributed more evenly over the homegarden and the dry field, and that at the extreme, dry fields begin to resemble homegardens.


This article describes the distribution of product flow coming from a woodlot project for the planting of trees in 1974-75. The project was located on the grazing lands of Dhanori village in the province of Gujarat (India). The socio-economic situation is described as having been highly stratified economically, politically and socially. The 40 largest landowners owned 30% of the land and 44% of the cattle and dominated the village council or panchayat. The villagers mistrusted the intentions of the Forest Department when the project was originally suggested, since they felt that their rights to the land used for the project would be put in jeopardy. The landless of the village provided the labour for planting, weeding (during the early stages), guarding of the plot (during the first three years), and harvesting. Grass (sold during the first three years), firewood, and lumber were products of the project. At the time of the final harvest, the village panchayat decided how the benefits should be distributed. (According to the author’s calculation the project was highly profitable showed an IRR of more than 35%) The monetary value of the benefits accrued were determined for all classes by the author who concludes that the distribution of benefits favoured the poor, landless class, followed by small farmers and then by marginal farmers. According to the original agreement, revenue generated from the sale of lumber was divided equally between the Forestry Department and the panchayat. Even if only one-quarter of this income were distributed among the landowning class, its share per household would still have been higher than that for the other classes.


This publication presents a set of case studies that relate individual communities’ experiences with the Communal Reforestation Programme. The studies describe the communities and the ways their reforestation ventures developed, demonstrating the way local community requirements, social structures and institutions can affect the development of participatory reforestation efforts.

The Communal Reforestation Programme, begun by the Peruvian government in the 1960s, aimed to involve communities as the principal participants and beneficiaries of reforestation efforts. The original goals were to: maximize community participation in tree planting; increase community influence in all reforestation decision-making; and distribute the cost and benefits of the programme equitably. Despite similar ecological and socio-economic characteristics, communities differed greatly in their response to reforestation proposals.
This study, which examines four of the communities involved in the government reforestation programme, analyses the factors that seem to have affected the success of reforestation efforts. These are: 1) Land availability: when the Agrarian Reform made more farmland available, conversion to forest seemed a smaller sacrifice. 2) Labour availability: recruiting labour for reforestation appeared to be easier when wages were offered. When salaries were paid, the community saw the project as a source of income rather than a drain on time. 3) Contract provisions: contracts, seeking to ensure that harvesting would be compensated for by new planting efforts, were seen by villagers as an imposition placed upon them by outsiders. Considerable opposition was encountered when villagers found themselves losing more arable land to reforestation in order to realize benefits from the original site. 4) Fuelwood shortages: Foresters assumed that the constant shortage of fuelwood and building timber would encourage village-wide reforestation; however, it was found that farming households, able to meet a good part of their needs through alternative sources, did not consider this a primary concern. 5) Socio-economic variation: significant socio-economic differences within the community tended to translate into different priorities related to the management of village resources. Reforestation on community lands often meant greater costs for poorer community members than for their better-off neighbours who were less dependent on access to village property. 6) Gender-based differences: in most of the study villages, women tended to be shut out of formal assemblies. In some communities, the land women used for grazing or to gather fuel was appropriated for reforestation.


This publication focuses on shifting cultivators’ knowledge systems mainly in Southeast Asian, Africa and the Amazon basin. Warner maintains that previously held attitudes towards swidden practices, seen as exploiting, not managing, the natural resources of the humid tropics, prove inaccurate; swidden land use systems, which are based on a traditional way of life shared by an entire, self-contained community and ritually sanctioned, do reflect natural resource management. Warner distinguishes between two types of shifting cultivation: that which is based upon long experience and that which is practiced by recent settlers in the area. That which has a long tradition is a complex agricultural system, often well-adapted to the environmental limitations of the tropics. It is not primitive nor necessarily destructive. It requires in-depth knowledge of the tropical environment and a high degree of managerial skill to succeed. These farmers have, through their very long experience, developed systems that work under difficult conditions even as contemporary tropical agricultural development projects in the same area routinely fail. Farmers stagger, interplant and diversify their planting of crops, they selectively weed, coppice and “manipulate” tree growth; they reap a wide array of forest products, and they supplement their diet with fish and forest game. The shifting agriculture practiced by “dislocated migrants” is less successful.

As the author points out, although swidden-based agro-ecosystems have been successful in the past, they cannot serve as the model for the future of
the tropics. However, the local technical knowledge found in integral swidden societies can contribute to better natural resource management and the development of sustainable agro-ecological systems. Warner recommends that swiddeners be active participants in designing new agro-ecosystems. She further recommends that agricultural and forestry extension agents be trained in the general principles of swidden systems: utilization of micro-environment differences, integration of trees into smallholder agro-ecosystems, and perception of agriculture as being one component in the larger agro-ecosystem.

This study is complemented by a 28 page bibliography.


Weinstock describes a swidden system in Borneo where rattan, which has a 7 to 10 year productive life, is used as a short-term cash crop. The integration of rattan with crops for food production has proven to be ecologically and economically successful. The author notes that the rotation of other perennial cash crops dominates that for food production, thus increasing the subsistence vulnerabilities of forest-dwelling households. In contrast, he argues that the short productive life of rattan does not allow for this to happen. He goes on to describe the botanical characteristics and uses made of rattan, noting that the 7 to 10 year productive life of rattan is equal to the minimal necessary fallow period for an ecologically-stable swidden system in the region. Weinstock also discusses the problems occurring during periods of very high demand for rattan associated with rapid commercialization and over-exploitation.


The authors discuss the distinction between tree and land tenure. They present information about plant land tenure in Indonesian Borneo and Papua New Guinea, distinguishing between plants used for local consumption and those used as cash crops; and, in the Borneo case, they add wild plants as a third classification.

In discussing the Borneo case, they note that Indonesian agrarian law reflects that of the Dutch: there is no distinction between tree and land tenure; ownership of plants is established through ownership of the land on which they are growing; rights to land can only be secured if it is proved that the land has “yield” (e.g. plants). They observe that rattan is a particularly useful plant, since a stand’s productive life of 7 to 10 years, unlike that of other cash crops, corresponds to the fallowing cycle length; and they note that this explains the spread of the swidden-rattan agricultural system.

Regarding the Papua New Guinea case, they observe that someone planting crops on land owned by someone else retains rights to the crops until harvested (temporary tenure); and that the introduction of perennial plants is
limited. They go on to discuss the conflict between loggers and clans, explaining that the loggers who have gained rights to trees to be harvested on clan lands are required by government policy to reforest land which they log, but that the clans have successfully resisted this, fearing that these long-term crops will be used as leverage by loggers for eventually gaining ownership of the clan lands. They note that similar land-tree tenure problems have held up the spread of agroforestry projects.


This is a brief description of the experience of “social forestry” and agroforestry projects in developing countries. The author argues for greater involvement of local peoples in the planning and implementation of forestry projects and programmes.


This paper describes the continued use and importance of trees in the Shona agriculture of Zimbabwe despite vigorous efforts by the colonial state to “rationalize” production. The author comments on the growth in dryland, which in the early 1900s shifted cultivation from the predominantly labour-intensive wetland agriculture of the preceding century, and which provided additional means for increasing household security (cattle raising and wage labour opportunities). In clearing of land, trees useful for their products as well as for their effects on underlying crops were left standing, and those deemed not to be useful were cut down. Since these trees coppice extensively, the stumps allowed for regeneration during fallowing. However, the colonial government vigorously encouraged the de-stumping of fields (thus greatly reducing their regenerative ability) and the cutting of standing trees in fields. The peasants resisted these efforts with ‘traditional authorities’ threatening to fine people who cut trees down. Trees on individually-owned fields are owned by the community. These trees were not only viewed as important economic assets to the community but also as sacred. The sacredness of the trees greatly stiffened the level of resistance of local farmers towards tree cutting.
INDEXING CRITERIA

This subject index aims to meet the needs of three types of potential users for at least four types of uses:

1) academic instructors to plan course and lesson content; and to select readings for students

2) researchers, graduate and undergraduate students to carry out research and research assignments (term papers, theses, dissertations)

3) foresters and policy-makers to plan familiarization and implementation courses

The subject index can serve both as a guide to: 1) the annotations presented in Part 2 of this publication; 2) the articles and documents themselves (where more extensive treatment of the topics can be found).

It can serve as a substitute for computerized and printed bibliographical tools where these are unavailable, allowing the user to identify existing publications which deal with topics of interest.

An effort has been made to cross-index and cross-reference entries, so that the user has multiple possibilities of finding publications that can satisfy his or her needs. For example, if the user is looking for information on nutrition needs which can be met by forest products, s/he would find indications under “nutrition”, “food”, “forests”, “forestry”, “forest products”, with cross-reference indications under “diet” and “trees” to the other headings. An effort has been made to keep the wording of the entries as close as possible to that used in the original text. This means that some articles are listed, for example, under “community forestry” and others under “social forestry”, some under “forests” and others under “trees”, some under “shifting cultivation” and others under “swidden agriculture”, some under “programme” and others under “projects”. The user should look under each of the key words of the topic s/he is interested in, as well as under possible synonyms or conceptually related terms. Primary geographical indications are also given.

With key word searches, browsing is a fundamental and usually a rewarding activity. This subject index has been organized to encourage and facilitate browsing, by offering scope of detail on the one hand and restricted length on the other.
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### ABBREVIATIONS AND ACRONYMS

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<tr>
<td>AD</td>
<td>Approach development</td>
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<tr>
<td>CFD</td>
<td>communal forestry development</td>
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<td>CPR</td>
<td>common property resources; also common pool resources</td>
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<td>ENDA</td>
<td>Environment and Development Activities, Zimbabwe</td>
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<td>FSR</td>
<td>Farming systems research</td>
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<td>FSRE</td>
<td>Farming systems research and extension</td>
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<td>GTZ</td>
<td>Gesellschaft fur Technische Zusammenarbeit</td>
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<tr>
<td>ICRAF</td>
<td>International Council for Research in Agroforestry (Nairobi, Kenya)</td>
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<tr>
<td>IDS</td>
<td>Institute of Development Studies</td>
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<tr>
<td>IIED</td>
<td>International Institute for Environment and Development</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>LDC</td>
<td>Less developed countries</td>
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<td>NASPAA</td>
<td>National Association of Schools of Public Affairs and Administration</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<tr>
<td>ODI</td>
<td>Overseas Development Institute</td>
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<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
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<td>PIM</td>
<td>programming and implementation management</td>
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<td>PVC</td>
<td>Peace Corps Volunteer</td>
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<td>RRA</td>
<td>rapid rural appraisal</td>
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<td>SFC</td>
<td>State Forest Corporation</td>
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<td>TFAP</td>
<td>Tropical Forestry Action Plan</td>
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<td>TWP</td>
<td>Tenau Watershed Project</td>
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