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Progress and Prospects of Community Forestry in Developing and Developed Countries

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Community forestry is practiced in various countries throughout the world, with respect to both native forests and plantations, for livelihood and forest protection purposes and also for urban amenity values. While forests have been managed to some extent by communities for thousands of years, modern models of community forestry have been practiced widely for only about 30 years. Community forestry takes many forms; there is no unique definition or categorisation, although a number of characteristics are frequently present. There is in general, involvement of a local community in forest planning as well as management, for a form of forestry which is usually relatively small-scale, motivated by multiple objectives, and receiving some financial support and organisational assistance by government and non-government organisations. Where plantations are established, these may be managed as common property, individual property rights may apply, or there may be a combination of both. Analysis of the specific research studies included in this issue reveals that community forestry systems have been refined over time as experience is gained in program designs, and notable successes have been achieved. However, 'the jury is still out' on whether community forestry has lived up to the optimistic expectations of its proponents.

Keywords: community-based forest management, joint forest management, indigenous communities, forestry aspirations, urban forestry

INTRODUCTION

The theme of community forestry was the focus of several papers presented at the International Union of Forestry Research Organisations (IUFRO) Group 3.08.00 symposium at Washington State University, Pullman, in March-April 2004. Further papers on this topic were presented at the end-of-project workshop of the Australia-

Philippines *Smallholder Forestry Project*¹ in Ormoc City, Leyte Province, the Philippines, in August 2004. All but the last two of the 10 following papers in this special issue arise from these two conferences.

During the 1980s, various *social forestry* programs were implemented by governments, often with unsatisfactory results, due at least in part to insufficient involvement of local communities in program design and management. It became recognised that more participatory or 'bottom-up' forestry programs are needed to engage and empower local communities, and have them take 'ownership' of forests and plantations. This led to the development of various forestry initiatives where community members have a major input in program design and implementation. In this context, community forestry was introduced, particularly in developing countries, to replace government designed or top-down forestry projects which were not well accepted at the local community level. The concept of 'community forestry' is also widely espoused in developed countries, particularly in urban and peri-urban areas, as well as in forest dependent and other disadvantaged communities.

This paper examines the various concepts and practices in community forestry, as scene-setting for the following papers that report findings of specific research projects. The collection of papers provided here is by design selective, and is by no means a comprehensive coverage of the wide applications of community forestry models. Definitions and concepts of community forestry are reviewed. Overview comments are made on the various contributed papers, some observations are made about the various contributions, and the viability and future prospects of community forestry are reviewed.

CONCEPTS OF COMMUNITY FORESTRY IN VARIOUS COUNTRIES

A literature search on the topic 'community forestry' reveals many thousands of items. In fact, using these keywords on Google Search on the Web scored over 4 million hits. A 17-page Community Forestry Bibliography has been prepared by INFC (2004). This surfeit of literature raises the question of whether it is sensible to attempt any classification of community forestry, or whether the topic is too big and diverse to allow systematic classification. What is notable in the literature is the differences in concept of community forestry between countries, and the following discussion attempts to characterise community forestry according to national and international concepts.

International Definitions of Community Forestry

A number of similar terms are used to describe forestry which has a community involvement, including social forestry, community forestry, communal forestry, participatory forestry and joint forest management. Some definitions for these terms are found in *The Dictionary of Forestry* (Helms 1998):

¹ This project, funded by the Australian Centre for International Agricultural Research (ACIAR), is formally known as Project ASEM/2000/088 – *Redevelopment of a Timber Industry Following Extensive Land Clearing*.

- (a) *Social forestry* is ‘aforestation, reforestation and other forestry programs that purposely and directly involve local people, their values, and their institutions – *synonym* participatory forestry, rural (development) forestry’ (Helms 1998, p. 170).
- (b) A *community forest* is ‘a forest owned and generally managed by a community, the members of which share its benefits’ (Helms 1998, p. 33).
- (c) A *communal forest* is ‘a forest owned and generally managed by a village, town, tribal authority, or local government, the members of which share its benefits in cash or kind’ (Helms 1998, p. 33).

Notably, these concepts differ from those describing the type of forestry, such as agroforestry, farm forestry, non-industrial private forestry, family forestry and urban forestry. In fact, various forms of forestry – with respect to both plantations and native forests – are often involved in a community forestry project.

Five reported definitions of community forestry have been cited by Sarre (1994), who emphasised participation and benefit sharing, and suggested that community forestry be viewed as ‘a process of increasing the involvement of and reward for local people, of seeking balance between outside and community interests and of increasing local responsibility for the management of the forest resource’ (p. 2). Sarre’s definitions clearly have developing country situations in mind, with use of expressions such as ‘a village-level forestry activity ... on communal land’, ‘long-term security of tenure over the forest’, and ‘people’s struggle against domination and exploitation of the community resources by ‘outsiders’’ (Sarre 1994, p. 1).

CIFOR (2004, p. 1) argued that community forestry has a very long history, reporting de Jong (a social forester in CIFOR) as stating that ‘Local groups living in the remoter corners of Asian countries have been practicing communal forestry for centuries. Communities from China, India, Indonesia, Nepal, the Philippines and Thailand were managing their forests long before colonial times. But the record shows a history of denial of this fact by forestry departments in order to justify dispossessing the local people of their forests’. A related and equally cynical interpretation of the development of community forestry is presented by Contreras (2000). He argued that community forestry programs are an adoption of the alternative discourse which began to challenge the legitimacy and effectiveness of development programs that failed to address the structural causes of poverty and environmental degradation in the 1970s. He further argued that by adopting the ‘opposing discourse’ within the ‘dominant discourse’, the ‘revolutionary meaning of empowerment and participation were arrested and a bureaucratised form emerged’ (Contreras 2000, p. 150). The result has been the maintenance of the existing power relations and ownership structures while at the same time undermining political opposition to structural inequities.

In the mid-1970s, worldwide research interest arose into linkages between people and trees, and people sought the definitions of the term ‘community forestry’ (Ford Foundation 1998, Treue 2004). Nearly every country around the globe is experimenting with some form of community forestry (McCarthy 2004). Peluso *et al.* (1994) provided the synopses of about 200 community forestry research reports in the 1970s to 1990s, and the International Network for Forests and Communities (INFC 2004) has compiled a list of about 300 publications concerning community forestry studies in various countries during the last two decades.

It is difficult to trace when and where the current concepts of community forestry first arose. A broad definition was framed by the Food and Agriculture Organisation (FAO) as early as 1978, and has been frequently cited:

Community forestry has been defined ... as any situation, which immediately involves local people in a forestry activity. It embraces a spectrum of situations ranging from woodlots in areas which are short of wood and other forest products for local needs, through the growing of trees at the farm level to provide cash crops and the processing of forest products at the household, artisan or small industry level to generate income, to the activities of forest dwelling communities. It excludes large-scale industrial forestry and any other form of forestry which contributes to community development solely through employment and wages, but it does include activities of forest industry enterprises and public forest services which encourage and assist forestry activities at the community level. The activities so encompassed are potentially compatible with all types of land ownership. While it thus provides only a partial view of the impact of forestry on rural development, it does embrace most of the ways in which forestry and the goods and services of forestry directly affect the lives of rural people (FAO 1978, p. 1).

This definition clearly identifies community forestry in terms of promoting the viability and sustainability of small-scale or non-industrial forestry. In this context, community forestry is perceived as encompassing the distribution of products and services arising from small-scale forestry as well as tree planting activities of communities and individual households. Critical to the sustainability of this small-scale production is well-defined property rights; definitions of community forestry remain nebulous if property rights are not clearly specified, in terms of comprehensiveness, excludability, duration, transferability and benefits conferred. In many instances, the distribution of property rights among individual households is often not explicitly defined, especially for communal land (Clogg 1997). The property rights issue is at the core of the emerging themes in contemporary community forestry, including conflict management, political and legal aspects, and economic incentives (Treue 2004).

The definitions of community forestry are as numerous and varied as the communities that are trying to implement community forestry projects, such as villages, towns and schools. Regardless of who the community is, based on the above definitions, one can understand that community forestry refers to the promotion of self-reliance, and management and use of trees to improve the livelihoods of community members in a sustainable way. Brendler and Carey (1998) identified three attributes commonly associated with community forestry, namely community economic development, sustainable forestry, and community participation. In other words, to constitute community forestry, residents should have access to the land and its resources, should participate in decisions concerning the forest, and should make an effort to protect and enhance the desired characteristics of the forest.

Community forestry is 'an umbrella term denoting a wide range of activities, which link rural people with forests and trees, and the products and benefits derived from them' (Arnold 1991, p. 25). In this context, community forestry should be understood as a process of increasing the involvement of local people as one dimension of forestry, agriculture, rural energy and other components of rural

development. Community forestry is not limited to the management of forests by communities for timber production for sale or household use, but also includes community management for non-timber forest products and non-market forest values including ecological, cultural, spiritual, recreational and aesthetic values (Colchester *et al.* 2003).

Community Forestry in India

The concept of 'social forestry' first attracted serious attention in the 1976 report of the National Commission of Agriculture in India, where it was viewed as a program of activities designed to assist rural poor dependent on fuelwood and other forest products (Arnold 1991). The social forestry approach, however, collapsed in India for a number of reasons, notably institutional failure of the top-down approach to village use of public forest land (Prasad and Bhatnagar 1995, Ebner 1996, Lawbuary 2004). A Forest Protection Committee was formed by villages in the Arabari forest in India back in 1972 (Poffenberger and McGean 1996), establishing a basic model for the development of joint forest management (JFM) in India in the 1980s, which led to great optimism about community empowerment and sustainable forest use (Harrison *et al.* 2001).

The JFM movement in India has been a major landmark in development of community forestry. Upadhyay and Jain (2004, p. 1) observed that '[c]ommunity forest management (CFM) in India is often equated with the joint forest management (JFM) movement that began transforming the national forestry sector in the early 1990s'. They argued, however, that CFM should be viewed differently in many parts of the north-east of India, where communities have direct ownership and control of forests. Forestry Department officials in India often oppose the term 'community forestry', claiming it has strong political implications of community ownership of forests and that such a thing does not exist in the nation (Apte and Pathak 2002). More than 17 M ha of forest is being managed by about 84,000 JFM groups in India (Sudha and Ravindranath 2004, Veer 2004).

Community Forestry in the Philippines

The Philippines is recognised as a leader in the development of community forestry programs. The Communal Tree Farming Program was initiated in 1979 (Gerrits 1996), the Community Forestry Program (CFP) commenced in 1989 and the Community-Based Forest Management Program in 1995 (Harrison, S. *et al.*, this issue). In recent years, community forestry programs of the Philippines (discussed in various papers in this issue) have provided valuable lessons on designing and implementing forestry and other livelihood projects with smallholder communities.

Community Forestry in Other Developing Countries

Malla *et al.* (2003, p. 1) reported findings of a socio-economic study of Forest User Groups (FUGs) in Nepal, noting the national government policy since the late 1980s of 'transferring the management responsibility for areas of forest (known as community forests) from the Forest Department to FUGs'. Nationally, about 1.4 M rural families have been involved in about 13,000 forest user groups and are managing 1.6 M ha of forest (Veer 2004). The Federation of Community Forestry Users of Nepal was formed in about 1995 and has a membership of about 5 M farmers, with representation from most of Nepal's 75 districts (FECOFUN 2004).

A number of community forestry initiatives have taken place in Indonesia. The far-reaching decentralisation policies in Indonesia have made this project approach highly relevant, shifting the forestry focus from national to regional and commune levels. Over the period 1992-2002, a community-based forest management program was trialed on a former concession area of 100,000 ha in West Kalimantan, Indonesia (Social Forestry Development Project 2002). In 1998, the Forestry Department issued a decree recognising the rights of communities in Krui in West Lampung to have permanent control of their forests under community management (World Rainforest Movement 2004).

In Thailand, more than 8,000 separate forests are being managed by local communities (Makarabhirom 2004). Enever (2004) noted that indigenous communities in Latin America hold land-rights to huge territories, where much of the forests are under heavy logging pressure from companies and displaced families. A case is cited of traditionally nomadic Yuqui indigenous groups implementing sustainable management plans over 120,000 ha in the Bolivian Amazon. Other developing countries in which there is strong interest in community forestry include Chile, Laos, Papua New Guinea and Vietnam; more than 20 papers for each of these countries are listed in the INFC (2004) bibliography.

Community Forestry in North America and Europe

A huge amount of information on community forestry in the USA can be found on the Web. According to the Washington Department of Natural Resources (2004), '[t]he Washington State Urban and Community Forestry Program works to educate citizens and decision-makers about the economic, environmental, psychological and aesthetic benefits of trees and to assist local governments, citizen groups and volunteers in planting and sustaining healthy trees and vegetation wherever people live and work in Washington State'. There is a strong emphasis in values of standing trees for local communities². Similarly, the Pennsylvania Urban and Community Forestry Council (2004) has extolled the community benefits of trees³.

The Alaska Department of Natural Resources (2004) observed that 'community forestry is often called urban forestry', providing the definition: 'A community or urban forest is all the trees growing in and around a city, town, or village. It includes trees in parks, school yards, home landscapes, utility rights-of-way, vacant lots, greenbelts, and along stream banks. Shrubs, ground covers, soil, wildlife, and water bodies are also part of the urban forest. Streets, buildings, utilities, parking lots, and, most importantly, people, are an integral part of the urban ecosystem'. Closely allied definitions also appear to characterise the concept of community forestry in other US states. The Bath Community Forestry Committee (2004) noted that the committee was formed in 1992, under the auspices of the Bath City Council, 'to develop a management plan for Bath's urban forest'.

Community forestry in the USA is also supported by private groups. For example,

² The US Federal Forest Service (2004) lists 'values of urban trees' to include psychological and aesthetic values, social values, historic values, environmental values, control over climate and air pollution and noise, protection of soil and water quality, and also monetary values.

³ The Council web site states that trees 'clear the air, reduce the urban heat island effect, reduce energy costs, conserve soil, and beautify neighborhoods. They make shopping districts more inviting, enhance residential and community property values, and reflect the pride we take in our communities'.

The Forest Guild (2004) has provided support for forest-dependent communities in villages in New Mexico, employing and training a youth corps to thin small diameter trees and carry out other fuel reduction work.

The community forestry model in Canada is similar to that in the USA, but with perhaps a greater emphasis on First Nation communities. For example, Denman Community Forest Cooperative (2004) has provided details of over 40 Community Forest Organisations in British Columbia, many of which are located in First Nation communities.

In the UK, 'community forestry' takes the form of peri-urban forestry. Roberts and Gautam (2003, p. 3) observed that a community forestry project was commenced in England in 1990, with 12 community forests established in urban-fringe areas, to provide well-wooded landscapes 'for work, wildlife, recreation and education'. These community forests are managed as a partnership between the Countryside Agency, the Forestry Commission, 58 local authorities and a host of other local and national organisations (National Community Forest Partnership 2004).

Hartebrodt *et al.* (in process) note that forests owned by communities – including cities, municipalities, villages and special cooperatives – are one of the main types of forest ownership in Germany.

A major distinction between the community forestry concepts in North America and Europe (except perhaps in the case of First Nation and other disadvantaged communities) relative to those in developing countries is focus on the various on-site values of trees, as distinct from production of timber and non-wood products for livelihood purposes.

The concept of community forestry is not widely embraced in Australia. According to Cadman (2004), in Australia '[t]here is no communally owned land, and consequently no impetus for land use initiatives such as community forestry'. This author noted that there have been some attempts to use the Regional Forest Agreement process to allocated land for community forestry in Tasmania, but the initiative was rejected by the State Government. Similarly, Roberts and Gautam (2003) have asserted that 'Australia, at present, has not introduced community forestry as a forest management option'. These views are not strictly true, in that land under Native Title can be regarded as communally owned land. First Nation (aboriginal) people have close affinity with forests, but little participation in production forestry. Also, Australia does have substantial community forestry in the sense that the term is used in the USA, where tree planting is undertaken by local government as well as Landcare groups and other volunteers.

OVERVIEW OF CONTRIBUTED PAPERS

The 10 papers which follow report community forestry studies in the Philippines, Nepal, China, Australia and Sweden, a major theme being evaluation of program management and performance.

Philippines Community Forestry Studies

Five papers examine community forestry in the Philippines. Harrison S. *et al.* (this issue) review support programs for smallholder and community forestry by the

Philippines government over about the last 30 years. These programs are seen to have evolved over time as experience has been generated on factors leading to success and failure. The multiple objectives of timber production, livelihood for smallholders, sustainable land use and environmental protection are apparent in these programs. Given the many objectives, and the many facets of these programs, a comprehensive evaluation of their performance is seen to be a near impossibility. The scale of the programs, with an aggregate area of several million hectares, is impressive.

Emtage (this issue) critically reviews the roles of and challenges faced by the many stakeholder groups involved in Philippine Community-Based Forest Management (CBFM), noting that the Philippines is recognised as a world leader in policies on community forestry. Challenges to the success of the program are seen to arise from the economically and socially marginalised position of the target communities, lack of resources available to support the programs, lack of physical and social infrastructure in the Philippines, and the continual revision of forestry policies and regulations. Some suggestions are provided to enhance the performance of CBFM.

Gregorio *et al.* (this issue) present results of survey research into the role of the forestry nursery sector of Leyte, Philippines, comprising individually owned, communal and government nurseries. Government nurseries appear to have failed to reach the majority of the smallholders, and seedling demand is mostly catered for by the more numerous and accessible individual and communal nurseries. Project-initiated communal nurseries are generally not sustainable after withdrawal of supporting agencies. There is a need to improve nursery silvicultural skills (especially on species which are difficult to germinate, and on vegetative propagation techniques for preferred fruit trees), knowledge on sources and collection of germplasm, and selecting of mother trees. Nurseries have a potential role in promoting appropriate site and species matching.

Mangaoang and Cedamon (this issue) present a case study of the establishment of a partnership between the College of Forestry at Leyte State University and the Conalum Agroforestry Farmers Association (CAFA) resulting from in-community nursery and field trial research under the Australia-Philippines *Smallholder Forestry Project*. The strategies adopted to build the partnership with the people's organisation are outlined, as well as practical impacts for the community. This study demonstrates how in-community research can be an effective extension mechanism if community members are given the chance to participate in all of the processes of the research undertaking, commencing at the planning stage, and the research agency has a continuing presence in providing technical support and encouragement.

Estoria *et al.* (this issue) apply a number of indicators to evaluate the performance of community organisers (COs) in Leyte, in their role of facilitating the development, empowerment and sustainable operation of people's organisations (POs) to manage CBFM. The indicators are based on quantitative and qualitative data obtained from a survey of community organisations and other stakeholders. The study reveals that COs are effective in forming POs, motivating people to participate in voluntary activities, and encouraging cohesiveness among members. However, the short duration of CO contracts (typically two years) is insufficient to establish mature and cohesive POs prepared to assume management on their own, including managing tree plantations. Also, other constraints, including pressure to

establishment large tree plantations quickly, prevent COs from placing sufficient emphasis on the development and empowerment of the people.

Other Asian Studies

Xu *et al.* (this issue) review community forestry initiatives in China, and describe a community forestry model in Huoshan County. The model has been successful in helping farmers meet the challenge of poverty alleviation through household forestry, science and technology demonstration households and independent farmers' organisations. Community forestry in China has to some extent replaced the traditional slash-and burn method and the large-scale utilisation style of government forestry management. The independent farmers' organisation is an innovation in modern rural economic cooperation. It builds the capacity of poor farmers in self-development, self-help and self-management, which is necessary for them to escape from the vicious cycle of poverty. Also, it is a way of training those farmers who have skills to take the lead in fighting poverty. Through protection and sustainable utilisation of natural resources, community forestry provides village surplus labour and especially women with employment opportunities, and allows farmers to increase their incomes and their ability to pay reasonable agricultural taxes, reducing conflict between the farmers and the government.

Acharya *et al.* (this issue) note that Nepal places high priority on management of forests for biodiversity, and communities are expected to embrace this requirement. However, there has been little research into community attitudes to biodiversity or even their understanding of the concept. Interviews with individual farmers and focus group discussions in two districts with contrasting geography reveal that the Western term 'biodiversity' is new and confusing to most forest people, who interpret the term in a variety of ways. While there are several related concepts in Nepalese language and rural culture, these are inconsistent among users and therefore of uncertain relevance in designing policy on biodiversity. This study suggests the need for some government initiatives to increase awareness about benefits of high biodiversity in forests, participatory research through which scientists and villagers can explore existing species diversity, and inclusion of a requirement for biodiversity conservation in community forest operational plans.

Australian Studies

Harrison, R. *et al.* (this issue) evaluate the Community Rainforest Reforestation Program in tropical north Queensland, Australia. While this is essentially a private non-industrial forestry program, it was initiated and strongly supported by local government, in part as compensation for World Heritage listing of the Wet Tropics rainforests, and involves the growing of mixtures of native rainforest and eucalypt tree species for multiple uses. This and other aspects set it apart as clearly having greater affinity with community forestry models in developing countries than is typical of farm forestry projects in developed countries. Some landholders have applied high-quality silvicultural management to their stands, with a view to timber production, while others have been more interested in wildlife habitat and other non-wood benefits. The project is found to fallen short in terms of the design objectives of creating a timber resource to replace that lost by the World Heritage listing, and land and water protection. However, it has yielded valuable experience in growing native tree species and mixtures, job training for young unemployed people, and

collaboration between Federal, State and local government in promoting reforestation.

In a study of potential timber utilisation by the Wik aboriginal community of Cape York Peninsula (CYP), Venn (this issue) has explored the visions of a timber industry by the Wik Community, Balkanu Cape York Development Corporation (a 'gatekeeper' agency) and The Wilderness Society (an environmental lobby group). A large resource of high-quality timber is found to exist on CYP, much of which is simply destroyed in clearing land for bauxite mining. Harvesting of native hardwood forest offers potential for increased self-reliance and desired *on country* work by a currently welfare-dependent community which has recently gained strengthened landrights. Goal programming reveals that a moderate technology forestry industry – somewhat different to the forestry visions of any of the three stakeholder groups – best meets the constraints and achieves the aspirations of the Wik community.

Swedish Study

Holmgren *et al.* (this issue) provide a further example of forestry as a common property resource (communal forestry) in a developed country, with reference to three boreal regions of Sweden. A comparative study is reported of forest condition and management between categories of commons and in relation to other forest ownerships. It is found that two out of three regions have an overly restrictive harvesting policy if the purpose of the forest commons and official forest policy are considered. Forest commons are likened to other shared private property (e.g. business partnerships and joint-stock corporations), and it is observed that other interests – including reindeer husbandry, tourism and nature conservation – have reduced the owners' control of the forest commons and limited the range of action they can take.

PROGRAM CHARACTERISTICS OBSERVED IN THE VARIOUS STUDIES

What general observations can be drawn about community forestry from these papers? The 10 studies are perhaps too small a sample of such a complex set of forestry management systems to draw broad implications. However, a number of observations can be made. There would appear to be no single model of community forestry, with arrangements differing between developing and developed countries, and also within each. Community forestry programs are found to possess a wide variety of characteristics (not all present in any one program), some of which are listed in Table 1. The characteristics are divided according to institutional and support arrangements, and performance in three sustainability areas (economic, social and environmental).

Table 1. Some characteristics of community forestry

Type of characteristic	Examples
Institutional and support arrangements (including property rights)	<p>Tree growing by smallholders, rather than industrial forestry</p> <p>Forestry on common property land, managed collectively by community members</p> <p>Indigenous land rights issues are involved</p> <p>Land and tree tenure is strengthened for participants</p> <p>Quality of stand management is not as high as in industrial forestry</p> <p>A substantial level of government financial support</p> <p>Funding provided by domestic and international agencies</p> <p>Involvement of local government</p> <p>Some form of community organisation is created to manage the program</p> <p>Tree growers choose their preferred species, but are constrained by species availability</p> <p>Assistance for community organising, usually through an NGO</p> <p>Many stakeholder groups involved in the program</p> <p>Access to formal timber markets is difficult</p>
Economic and livelihood characteristics	<p>A major objective is providing livelihood activities for poor farmers</p> <p>Some of the timber produced for own use, including structural timber and fuelwood</p> <p>Includes agroforestry projects</p> <p>Other livelihood projects are associated with tree planting (e.g. fish ponds)</p> <p>Includes community-developed and managed tree seedling nurseries</p> <p>An objective is to increase the regional supply of timber</p> <p>The financial viability of the project is marginal</p>
Social characteristics	<p>Strong involvement of local communities in project design (bottom-up design)</p> <p>Forestry is designed to empower the community</p> <p>Supported by a training program</p> <p>Is a means of settling potential insurgents to improve the law and order situation</p> <p>Landscape amenity and livability of the area are enhanced (developed countries)</p>
Environmental characteristics	<p>A major objective in forest protection from illegal logging</p> <p>A major objective in settling shifting cultivators</p> <p>Aims for environmental benefits such as watershed protection and flood mitigation</p> <p>Native tree species grown</p>

Community forestry is typically a form of multiple-use forestry managed by smallholders often utilising tree species not widely grown in industrial plantations and sometimes growing species mixtures or adopting agroforestry systems. Some management of natural forest is often involved. The 'community' element may for example take the form of community motivation of the program, program implementation through a community organisation (even though some or all tree planting may be on individual smallholder land), tree planting and management on

common property land, forest protection by community members, or timber harvesting and processing by community members. Some degree of involvement of local people in program design is usual, but with government providing program recognition (and often being the program initiator), and funding support. Non-government organisations (NGOs) are also prominent in many programs, and contribute particularly to community organisation and capacity building.

The mix of characteristics varies between developing and developed countries. In the former, the aim is generally to ensure sustainable use of forest resources and to create livelihood opportunities for a low-income group, as well as to achieve watershed protection. International loan funds are often used to support the programs. Substantial financial and organising support is often necessary to launch programs, and some intervention may be required to keep them afloat. Community forestry programs in developed countries are typically concerned with mixed species, farm and urban plantings, and environmental objectives may figure strongly, although programs for First Nation communities are more akin to those in developing countries.

VIABILITY AND FUTURE PROSPECTS FOR COMMUNITY FORESTRY

As illustrated in the 10 studies reported above, community forestry programs have achieved some notable successes in establishment of forestry plantations and management of native forests, for livelihood and environmental objectives, in developing countries and in First Nation Communities. In urban areas of developed countries, the emphasis has been on landscape and livability, and on hazard reduction (particularly in relation to wildfires). However, the difficulties faced by community forestry programs, particularly in developing countries and in indigenous communities, should not be underestimated. These problems may be examined in terms of the 'four keys' to smallholder forestry advanced by Byron (2001), namely secure property rights to land and tree crops, a viable production technology, capacity for crop protection, and adequate markets.

Community forestry is often a means of providing secure land access, as in the CBFM program in the Philippines. At the same time, as CBFM plantings reach harvest age, tree tenure and harvest rights are increasingly being recognised as areas where policy reform is needed. Similarly, access to formal markets, particularly for relatively small lots of farmer-managed mixed-species timber presents difficulties. Market access is related to production technology, and in this context inferior site-species matching and silvicultural practice of community forestry sometimes creates impediments to markets.

The evidence suggests that community forestry is typically a fragile arrangement, and communities require assistance and continued encouragement by a variety of stakeholder groups (Emtage this issue). Managing plantations in terms of weed control, pruning and thinning without external financial support can present difficulties for subsistence farmers. Support, to be effective, does not necessarily involve additional funding. Other possibilities including access to high quality germplasm (Gregorio *et al.* this issue), continued community organisational support (Estoria *et al.* this issue) and access to technical support and trouble-shooting through partnership arrangement with a research group (Mangaoang and Cedamon

this issue). 'Crop protection' in the sense of monitoring and policing plantations to prevent timber theft has been identified a difficult challenge in some Philippine CBFM programs (e.g. Tarun-Acay 2004, Estoria *et al.* this issue), and sometimes beyond the ability of communities without assistance from government agencies.

What is the future of community forestry? Can an expansion of communal plantings be expected, or will the movement wane in favour of individual property rights (IPR) plantings? The design of community forestry programs has come a long way over the last 30 years, and it can be expected that programs will continue to evolve (Harrison, S. *et al.* this issue). Community forestry is a practical means by which governments can support rural livelihood projects, and encourage communities to be guardians of their forests. It provides a vehicle by which governments and NGOs can channel domestic funding and foreign assistance to low-income smallholder communities, achieve integration of plantings for watershed protection, deliver training and capacity-building programs to small communities, and provide compensation to regions disadvantaged by other government programs. It could also facilitate arrangements for the making of payments to growers for carbon sequestration, in both developing and developed countries, by creating economies of scale with regard to transactions costs.

Despite these attractions, the question must be asked as to whether it would not be more cost-effective and conducive to crop protection to direct support to IPR plantings, under the umbrella of a community organisation. This appears to be a current trend in Philippine CBFM arrangements. While the performance of communal tree planting may not fully justify early optimism, there remains a strong case for pursuing community forestry agreements in the sense of contractual arrangements between governments and community organisations (rather than individual landholders). Such arrangements have clear appeal for delivery of government welfare and environmental programs.

DISCUSSION

Community forestry in its current forms originated about 30 years ago, as an alternative to social forestry in which local community members have a greater input in planning and management decisions and greater financial and livelihood stake. A wide variety of community forestry programs can be found within and between countries. Because of the wide range of characteristics, it really is not possible to formulate a narrow definition of community forestry. The nature of community forestry differs considerably between countries, particularly between developing and developed countries, and between programs within countries. Major community forestry movements have occurred in India, the Philippines and Nepal. These differ greatly from the 'western' model of urban forestry and in some cases farm forestry.

Key elements of community forestry are involvement in planning and management by local smallholders or landholders, and an emphasis on sustainable forest use and multiple benefits to participants. Community forestry typically involves multiple-use forestry, in the form of communal forestry and smallholder forestry, including agroforestry. Community forestry may mean communal plantings, or planting by communities or individuals but under the control or assistance of a community organisation.

It is apparent that community forestry is widely adopted, and will continue to be a popular forestry model, driven by both social and environmental imperatives, and perhaps continuing to displace industrial forestry. Community forestry has evolved as greater experience has been gained by government and non-government stakeholders. As further experience is gained, it is likely that arrangements will be further refined. Because of the multiple goals, including social benefits, it is to be expected that governments in developing countries will continue to provide support for community forestry programs.

The performance of community forestry appears to be highly variable. Outstanding achievements are apparent at some showcase sites, while projects have been abandoned at others. It is clear that a substantial amount of assistance in the form of organising and training, as well as financial inputs, are necessary for sustained functioning of the local community organisation and the active participation of members. At this stage, community forestry does not appear to have led to a large amount of timber being placed on markets. Key problem areas often relate to restrictions on property rights of participants (concerning land and tree tenure), and difficulty in tree protection and accessing markets.

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