

Community participation in the management of nature reserves: experiences and lessons from China

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Effective management of nature reserves depends on partnership with communities living in or adjacent to them; these Miao (Mong) inhabitants of a village in the Daweishan reserve depend on the reserve resources for their livelihoods

Experiences from nature reserves in southeastern Yunnan Province, China, provide lessons for improving co-management for more effective integration of natural resources conservation and local community development.



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To protect conservation targets effectively and achieve the goals of reserve establishment, reserve management needs to build partnerships with the communities living within or nearby nature reserves and to address their needs for forest resources for their livelihoods. Co-management approaches have been developed to integrate natural resources conservation and the subsistence and development of local communities.

In China, since the beginning of the 1990s, co-management has been accepted by research institutes and adopted by government agencies responsible for natural resource management as a preferred approach to the management of nature reserves. However, the practice of co-management in China inevitably encounters problems of various kinds, deriving from differences in social, economic, cultural and historical contexts as well as in understanding and experience. Yunnan, one of the

provinces with the richest biodiversity and most numerous nature reserves in China, has pioneered co-management since the 1990s. This article examines some of the achievements and problems in several national nature reserves in southeastern Yunnan Province and proposes measures for improvement from the perspective of sustainability and community development.

IMPLICATIONS OF CO-MANAGEMENT

Co-management is an application of community forestry concepts in forest resource and nature reserve management. Its underlying premise is that to conserve forest resources and manage nature reserves effectively, it is essential to give sufficient consideration to the needs of the people living within and around the forest or reserve (Western and Wright, 1994). Other related terms with a similar meaning include “forest co-management”, “participatory



In the Daweishan reserve project, discussions with community members and reserve staff contributed to the formulation of rules and regulations for the management of forest resources, which have been incorporated into the village rules

management”, “collaborative management”, “facilitated management” and “partnership management”.

Community participatory management of nature reserves should comply with the goal of reserve establishment, namely, to conserve the biodiversity harboured within the reserve. Reserve management should benefit local people and satisfy their needs for forest and related resources (Western and Wright, 1994), by:

- formulating master plans on the basis of the practical situations of the reserve;
- formulating clear management objectives for different zones of the reserve on the basis of related government policies and the requirements and status of the specific conservation targets;
- formulating adaptive management plans suitable for community participation;
- strengthening inventory and research on the species of fauna and flora occurring in the nature reserve;
- strengthening the institutional capacity and developing the human resources of the communities in and around the nature reserves, and promoting exchange of information and experiences among reserves;
- strengthening awareness building

throughout society to promote the establishment of adaptive policies, attract financial support and encourage people’s participation.

EXPERIENCES OF CO-MANAGEMENT IN YUNNAN

Some achievements

Benefits to local communities. Before China initiated a logging ban in 1998, more than half of the villagers living around Wenshan State Nature Reserve earned their income mainly by harvesting timber and bamboo from the collective forests and nature reserve and selling them in the markets, especially in the autumn and winter. After the logging ban came into force, the villagers living around the reserve lost their sources of income and were reduced to a life of extreme poverty. Most of the villagers did not earn enough to buy food and clothing or to pay school fees, with some children having to interrupt their schooling as a result.

Since 2000, a co-management approach called integrated community management planning has been developed in the communities around the nature reserve, supported by both prefecture and county governments. The implementation of co-management has helped improve the living standards of nearby communities, for

example through the planting of fruit-trees, and has provided other benefits such as the introduction of biogas stoves to overcome the problem of fuelwood shortage.

Easing conflicts between the reserve and the adjacent communities.

The difficult situation arising from the introduction of the logging ban in Wenshan State Nature Reserve aggravated conflicts between the reserve and the adjacent communities and made it more difficult to manage the nature reserve and the surrounding collective forests. The implementation of co-management not only provided benefits to nearby communities, but also remarkably reduced forest-related illegal activities. The conflict between the nature reserve and the communities has been considerably eased. The villagers’ enthusiasm for forest management has been mobilized, and this has permitted the recovery of the vegetation and wildlife resources of the forests that are under co-management.

Shifts in the mandates, responsibilities and functions of reserve management.

Co-management has triggered changes in the government agencies managing the reserves. To involve communities actively in reserve management, to conserve the plant and wildlife resources of the reserve effectively and to implement co-management activities successfully, it was necessary to redefine the functions and responsibilities of the county- and township-level agencies managing the reserves.

Community development and technical extension functions have been added to the responsibilities of reserve management. Tasks such as patrolling, guarding and law enforcement, previously the main functions of the management offices at the county level, have been delegated to the management stations

at the township level or forest guards in villages. The management offices at the county level have expanded their duties to embrace community development services and collective forest management; they are now mainly responsible for supervising law enforcement, mediating conflicts, providing technical service to the adjacent communities and coordinating activities among related departments.

Establishment of reserve management regulations. A community participatory reserve management project was carried out in Daweishan State Nature Reserve with support from the Ford Foundation and a small grant from the Global Environment Facility (GEF) from 1998 to 2001. With the participation of reserve staff and community people, the project formulated or improved a series of rules and regulations for the management of forest resources in the nature reserve and its adjacent communities. With full respect for the local customs and habits, reserve management rules and regulations have been incorporated into the village rules of the related communities.

Community acceptance of co-management. Through research, demonstrations, training, study tours and awareness-building activities in nature reserves such as Daweishan and Wenshan and their adjacent communities, community people are becoming increasingly interested in co-management approaches and in the work of the researchers and the reserve staff. Through these activities, most of the villagers have realized the importance of forest conservation and reserve establishment, and this has helped improve the relations between the reserve and the adjacent communities.

Some observations

Multiple approaches should be sought to satisfy the needs of the community for forest resources. As most nature reserves in Yunnan are located in remote areas with inconvenient transport, poor information access and a developing economy, people living in and around these nature reserves are extremely dependent on the reserve resources for their livelihoods. The establishment of the nature reserves reduced the land available to them and severely limited

their sources of subsistence and their scope of economic activities (Lai, 1997). Comprehensive approaches including measures for fuelwood conservation, poverty alleviation, sustainable economic development, environmental protection, technical services and capacity building must be adopted to satisfy the needs of the villagers for wood and non-wood forest products from the reserve for their economic and cultural development activities.

Co-management should be fine-tuned to suit local conditions, guided by unified management plans and scenarios.

Even within the same nature reserve, areas that differ physically, socio-economically and culturally can still be identified. In management, these areas should be treated differently, and management plans and rules need to reflect the differences (Lai and Wang, 1998). At the same time, the physical, social and economic conditions of an area may be subject to changes, and management requirements will change accordingly; therefore, the management must be revised in a timely way to suit altered conditions.



Demonstrations, training and awareness-building activities in communities in and adjacent to Daweishan State Nature Reserve have interested people in co-management



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Benefits from co-management projects in Yunnan Province have included the construction of biogas pits (pictured) and introduction of biogas stoves to deal with fuelwood shortage

Partnership and cooperation in nature reserve management must be broadened. Experience has shown that the efforts of the agencies responsible for reserve management are not alone enough to complete the necessary tasks. Partnership should be sought with local communities, government agencies in such sectors as forestry, agriculture and livestock management, and institutions providing technical support and services such as universities and research institutions. Practical cooperation and equality among partners should be sought as much as possible for effective joint management, equitable ben-

Fifth World Parks Congress

A once-a-decade event to shape the future of protected areas.



As the final touches were being put on preparations for the XII World Forestry Congress in Canada, another major conference of interest to the global forestry community was under way in Durban, South Africa. From 8 to 17 September 2003, protected area professionals and stakeholders met at the fifth World Parks Congress (WPC) to address the theme "Benefits Beyond Boundaries". The congress, organized by the World Conservation Union (IUCN) once every decade, brings participants together to review the global status of protected areas, to assess the critical issues facing them and to map out directions and actions for the next decade and beyond. The 2003 meeting had a special focus on African protected areas.

Around 3 000 people attended the congress in Durban. Congress activities included plenary sessions, symposia, working group discussions, side meetings, special events and an exhibition.

With seven workshop streams, three cross-cutting streams and six or more working groups in each stream, at any one time there were several dozen working group

discussions going on. Some of the areas covered included developing the capacity to manage; building a secure financial future; building broader support for protected areas; governance of protected areas; evaluating management effectiveness; and communities and equity.

Side meetings included, among others, presentations on HIV/AIDS and natural resource management and on transboundary parks – a potential means of addressing cross-border poaching.

Five major outputs were presented in Durban.

- **Durban Accord.** This is the principle message from the congress to the world – a communication tool rather than a scientific summary of the congress. It is intended to inspire and influence positive action for protected areas.

- **Durban Action Plan.** This is not a blueprint for all nations and all protected areas, as it is recognized that there are local, national and regional variations in approaches. The action plan outlines suggested activities needed to increase the

efit sharing and community development.

The participation of women in reserve management also requires increased attention. Many forest products such as fuelwood, fodder and non-wood forest products are collected primarily by women, and women thus have an important role in ensuring the conservation and sustainable use of forest resources.

Co-management should be implemented in a gradual manner, should focus on practical results and should be based on the willing participation of the villagers. The experience of the

demonstration programmes in the two villages adjacent to Daweishan State Nature Reserve suggested that “seeing is believing” should be the basic principle in promoting co-management (Lai, 1998). At the same time, the expected results can only be achieved if co-management is developed in a gradual manner and with full consideration of the will and receptiveness of the villagers.

Issues still to be addressed
Inadequate approaches to community poverty. To conserve the forest resources of Wenshan State Nature Reserve, the Wenshan County government contracted

households from 11 villages immediately adjacent to the reserve as forest guards. General households were paid 100 yuan (US\$12) and village heads 200 yuan (US\$24) per month. In this way, the county government has helped meet the villagers’ urgent need for cash. There appears to be no similar practice elsewhere in Yunnan, and perhaps not even in the whole country.

Contracting forest guards and offering monthly salaries should not be a controversial issue, but it may have disadvantages. The regular cash payments provide a stable income for the villager forest guards, but they may

benefits of protected areas to society and to improve their coverage and management.

- **Message to the Convention on Biological Diversity (CBD).** The aim of this document is to influence the development of a programme of work on protected areas under CBD, drawing from the discussions and main outcomes of the congress, especially the Durban Accord and the Durban Plan of Action.
- **Recommendations.** At the congress, 32 motions (of which 29 had been submitted to the WPC Recommendations and Preparatory Committee and made available for comment before the congress) were considered in discussion groups and reviewed and approved in workshop plenary sessions. The 32 resulting recommendations cover all the themes addressed in the workshops.
- **Emerging issues.** This document summarizes several issues of significance that were not covered by the WPC Recommendations but were identified during the workshop discussions and approved

by the workshop plenaries for inclusion in the congress proceedings.

None of these outputs is legally binding, but they are expected to set the agenda for protected area theory and practice for the coming decade and beyond.

In addition to formal outputs, a number of new protected area initiatives in Africa were introduced. These include:

- African Protected Areas Initiative;
- African Convention on the Conservation of Nature and Natural Resources;
- African Protected Areas Trust Fund;
- West African Marine Protected Areas Action Plan;
- Madagascar Initiative, announcing a tripling of the area of land under protection;
- four new marine protected areas in Senegal.

Furthermore, highly significant increases of land under protection in the Amazon were announced. The state government of Amazonas, Brazil announced the establishment of six new protected areas covering 3.8 million hectares – an area equal to the size of Belgium holding

some of the world’s richest biodiversity. The state of Amapá announced the creation of a 10 million hectare biodiversity corridor that covers 71 percent of the state, including the world’s largest tropical rain forest park.

The congress provided a unique and invaluable opportunity to learn about and discuss the global status of protected areas, future challenges and priorities for action.

Congress outputs are available at www.iucn.org

result in financial difficulties for the local government. The government of Wenshan County, for example, has invested almost US\$73 000 each year in joint forest guarding, an investment that can hardly be maintained by such a poverty-level county in the long term. In addition, the 100 or 200 yuan monthly payment has been described as hardly enough for the monthly living cost of a middle school student. Reliance of the villagers on this scant income source may encourage them to miss opportunities for real development.

The practice of hiring local forest guards has in some way sharpened the conflicts between the nature reserve management agency and the communities. People from villages not covered by the programme have complained that they should have the same opportunities and treatment as the other 11 villages because their conditions are similar. In retaliation, some of them have resorted to more serious illegal harvesting of reserve resources. A leader from the Wenshan Nature Reserve Bureau reported that even though many villages are enjoying monthly subsidies and biogas pits have been constructed, the villagers still turn to the nature reserve,

stealing trees for commercial purposes and collecting fuelwood and non-wood forest products.

Ineffectiveness of relocation as a means of solving the conflicts between the reserve and the communities. Throughout the world, it has been a common practice to facilitate reserve management by relocating people to eliminate the conflicts over land uses, resource management and conservation between the reserve and the adjacent communities. Surveys in Wenshan, Nangunhe, Gaoligongshan and many other nature reserves in Yunnan suggested that relocation may be a good way to address the problems of the reserve (e.g. illegal harvesting) (Lai and Wang, 1998), but that relocating villages or villagers often leads to social, economic and cultural changes which can easily result in social problems. Adapting to the new environment is difficult for the villagers and sometimes makes their lives even harder. Meanwhile, after relocation of the villages or villagers, the area of the nature reserve may expand. The expanded nature reserve is sure to have new boundaries and new villagers nearby who are likely to treat

the reserve resources in the same way as the relocated people. Thus, the same problems may remain.

Need for conformity of policies and regulations. In discussions and surveys, villagers and forest guards often expressed frustration that different policies and regulations were applied in the same nature reserve. For example, Daweishan State Nature Reserve is located in Pingbian and Hekou counties, and the two counties differ greatly in their management of planting of *Amomum tsao-ko* (a valued spice and medicinal plant) and hunting activities in the reserve. The different regulations have created difficulties in law enforcement for the forest guards and reserve staff and have aggravated the conflicts between reserve management departments and the communities (Lai, 1998). Even if a nature reserve administratively crosses several counties, prefectures or provinces, it would be preferable if the same management mode could be applied. Management offices or stations in different administrative areas should strengthen their exchange and cooperation to formulate and implement unified management policies and to minimize



Since most nature reserves in Yunnan are located in remote areas with a developing economy, comprehensive approaches are required to meet the local villages' economic needs while conserving forest resources

conflicts among the different departments.

Importance of a “buffer zone” in sustainable forest management. The term “buffer zone” refers to a certain area outside the boundary of a nature reserve. Communities adjacent to a reserve undoubtedly are more involved in managing, using and developing the forest and its resources than communities further away from the reserve, and they thus have a more direct impact on the protected wildlife and plant species and their habitats. Therefore reserve management departments and local government should give special attention to the communities in the buffer zone and their land use and land development practices.

One issue to be addressed is the development of plantations by the communities adjacent to the Daweishan Nature Reserve. Since the 1980s, driven by economic interests and the need for timber, communities in both counties around the nature reserve began to create large-scale plantations of Chinese fir (*Cunninghamia lanceolata*) and to plant cash crops such as pineapples, bananas and rubber trees (*Hevea brasiliensis*). To do so they removed the original secondary shrubs. Plantation management has greatly promoted the rural economy in the local area. However, if such plantations are developed without general planning giving consideration to biodiversity conservation, not only will the extension and regeneration of the protected species be limited outside the nature reserve, but the reserve will also become an isolated island among the plantations, which can cause new conflicts and problems.

With due consideration to the needs of the villagers for forest resources and economic development, detailed studies are needed to determine how properly to define the role of the “buffer zone”.

Need for defined functions and roles of reserve management agencies and governments. Technical services, natural resource management, fuel-efficient stove construction and rural development used to be, and in the author’s opinion should be, the responsibility of the functional departments of government. If the work scope of the reserve management agencies is to be expanded to cover the adjacent communities and their duties are to be extended to cover these issues, then what is the role of the functional departments? The functions and role of the reserve management departments need to be clearly defined to prevent overlap.

CONCLUSION

Based on the above discussion, the following preliminary recommendations are proposed.

- Unified or comparable policies and regulations need to be formulated and implemented across the administrative boundaries of nature reserves.
- “Buffer zone” management should be considered and carefully planned, and corresponding integrated land use plans should be developed based on the physical conditions, plant and animal species present, social and economic conditions and the adjacent communities’ need for and use of natural resources.
- The functions and role of the reserve management departments in community development and community forest management need to be clearly defined.
- The capacity of the adjacent community for integrated management (including social, economic and resources management) should be enhanced. The role of women in the management of nature reserves and related resources should also be strengthened.

- Channels should be set up to ensure exchange between the nature reserve and communities, and incentive systems for community participation in reserve management should be further developed. ♦



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In Search of Excellence: exemplary forest management in Asia and the Pacific

P.B. Durst and C. Brown

The Asia-Pacific Forestry Commission (APFC) launched its In Search of Excellence initiative in November 2001. Interested individuals across the region were invited to nominate forests in Asia and the Pacific that they perceived to be well managed, and were further asked to elaborate on the specific aspects of the management of those forests that they considered to be most exemplary. A key objective of the initiative is to highlight the many positive forest management efforts in the region, which unfortunately are often overshadowed by the plethora of negative news about forests. The best practices associated with these successful management experiences – particularly the common elements of success – will be identified and widely promoted to encourage their broader application.

In Search of Excellence aims to identify:

- examples of good forest management across a broad range of forest ecotypes from many countries in the region, and covering a variety of management objectives, different ownership structures and both large and small forest areas;
- forest management practices that show promise for the future and for other areas;
- people's perceptions of what constitutes good forest management.

The initiative is being carried out by FAO and the Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC) in partnership with APFC member countries.

The invitation to nominate forests was widely announced via Web sites, newsletters and brochures over a period of several months. Nominating workshops were also convened in nine countries, providing opportunities for participants to debate extensively the elements of good forest management.

The nominating process closed on 1 May 2002, with more than 170 nominations received from 20 countries. Nominated forests ranged in size from less than 20 ha to nearly 2.5 million hectares and included forests managed for protection of watersheds and biodiversity, timber production, recreation, non-wood forest products, agroforestry production, rehabilitation, tourism and multiple use. They included State-owned forests, private forests owned by individuals and corporations, community forests and joint ventures. Nominations included natural forests, plantations and agroforests from New Zealand to Kyrgyzstan. Nominations were

most numerous for forests in India (39), Indonesia (25), New Zealand (17), Nepal (14) and the Philippines (14).

A technical working group comprising ten individuals with diverse forestry knowledge and experience from around the region systematically reviewed all 170 nominations and selected 30 forests for in-depth case studies. Emphasis was placed on identifying a variety of instructive and innovative management experiences, characterizing a full range of management objectives across several countries in the region.

The complete set of nominations and particularly the in-depth case studies are currently being analysed to identify common elements contributing to excellence in forest management. Initial review indicates that those submitting nominations tended to define excellence in terms of outstanding science-based forest practices and well-ordered management organizations functioning in a participatory and transparent manner. Excellence was also commonly described in terms of impressive biophysical changes (e.g. rehabilitation of degraded areas, reduced soil erosion, enhanced water quality and yield) or positive socio-economic changes (e.g. increased incomes for local residents, improved availability of forest products, enhanced understanding and appreciation of healthy forests). The involvement of multiple stakeholders in decision-making and the management of forests for multiple benefits were also usually recognized as important elements of exemplary forest management.

An overview of the findings and a compilation of the case studies will be published in early 2004. It is further anticipated that a series of seminars and workshops will be organized in 2004 to highlight the findings. For more details of the initiative, visit the APFC Web site at: www.apfcweb.org

FAO has recently carried out a similar In Search of Excellence exercise in Central Africa, in collaboration with the Inter-African Forest Industries Association (IFIA), the Worldwide Fund for Nature (WWF), the African Timber Organization (ATO), the International Model Forest Network Secretariat (IMFNS), the International Tropical Timber Organization (ITTO) and the World Conservation Union (IUCN). The case studies of the African initiative have been published recently as FAO Forestry Paper No. 143. (See the book section of this issue of *Unasylva*.)

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