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Resources Management within Nature Reserves in China

by

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For more information write to Emeritus Professor Clem Tisdell, School of Economics, University of Queensland, Brisbane 4072, Australia.

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Resources Management within Nature Reserves in China

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Abstract

This paper summarized existing national administrative system for nature reserves and described relevant legislation and concrete stipulations on resources management within nature reserves in China. It also concluded the present status for resources' utilization within reserves and their benefits, and revealed the problems arisen from the resources' development. Furthermore, based on the analyses for existing problems, the paper presented a series of suggestions for management of the resources' utilization within nature reserves in China by revising legislation, reforming economic policies, establishing management mechanism, environmental monitoring system and technical guidelines and standards, and allocating reasonably the benefits produced from resources' development, among the stockholders.

1. Current Administrative System, Policies and Legislation for Nature Reserves' Management in China

(1) Current administrative system

There is a rapid development for nature reserves' establishment for the past 20 years in China, from 34 in number with 0.13% of territory land in 1978 to 1146 in number with 8.8% of territory land in the end of 1999 (Han 2000; Xue 1993), with nine categories (Xue and Jiang 1994b). However, about 10 ministries in the central government are involved in the reserves' management, as well as local government in different levels (Xue and Jiang, 1994a; SEPA 1998b).

The State Environmental Protection Administration (SEPA), as the comprehensive administrative authority for nature reserves' management in China, is responsible to formulate legislation, policies, planning, standards and guidelines for nature reserves' management nationwide, and assess, supervise and inspect the implementation of the legislation and policies (SEPA 1998a, 1998b)

Other ministries involved in reserves' management, such as State Forestry Administration, Ministry of Agriculture, State Oceanic Administration, Ministry of Construction, Ministry of Territory Resources, Ministry of Water Conservancy and State Chinese Medicine Administration are separately responsible to concrete professional management for different categories of reserves. They can also issue regulations and policies for reserve's management under their jurisdictions (SEPA 1998a, 1998b).

The nature reserves in China can be divided as national level and local levels and the latter can further divided into provincial, municipal and county levels (Xue et al, 1993). The ministries of central government are mainly in charge of national nature reserves, and local governments are in charge of reserves in local levels. However, sometimes, the system is mixed.

(2) Current policies

Chinese government, in its document of "China Agenda 21" issued in 1994, put forward the national general policy for natural conservation. It can be described as "integrated planning, active protection, scientifically management and sustainable use" for the natural resources and environment (SPC 1994).

SEPA set a series of policies for environmental impact assessment (EIA). It provides that such natural resources development activities as forest logging, tourism development and facility construction within nature reserves and wetland exploitation are subject to EIA procedure.

State Forestry Administration (SFA) has practiced many policy systems, including limiting forest logging system, certification system for wildlife's use, transportation, importing and exporting, domestic raising and hunting, and compensation taxation system for forest land occupation, hunting, coal mining and paper manufacture.

Ministry of Agriculture has issued a lot of policies for eco-farming, genetic resources protection, sustainable use of fishery resources, certification for fishing and hunting aquatic wildlife.

The other ministries concerned also formulated policies for natural resource use and reserve management.

(3) Current legislation

As far, *China Nature Reserve Regulation* is the most authoritative statute for reserve's management in China. The *Regulation* was issued by the State Council in 1994. Some stipulations on resource management and development within reserves are included in the Chapter Three of the *Regulation*, with some focal points as follows:

- A combined administrative system of comprehensive and professional management is now applied for nature reserve management in China. SEPA is in charge of comprehensive administration, and the other ministries of forestry, agriculture, mining resources, water conservancy, marine and so on, are responsible for professional management.
- It is prohibited in reserves for the activities such as tree-cutting, grazing, hunting, fishing, gathering medicinal herbs, farmland-reclaiming, grass-burning, mining, stone-mining, sands dragging, etc.
- Nature reserve is designed as core zone, buffering zone and experimental zone. In principle, any person is not allowed to enter core zones, unless the admission is for scientific research and approved by a competent governmental authority concerned.
- It is banned to develop tourism and any production in buffer zones. Activities of scientific research, teaching practice and sampling collection for the purposes of

research and teaching in buffering zones are subject to approval by reserve's administrative institution.

- It is controlled for activities of tourism and visiting in experimental zones. A detailed planning for this kind of activities should be presented by reserve's administrative institution in advance, and approved by a corresponding competent governmental authority.
- Any construction of facilities for production is prohibited in core zones and buffering zones. Pollutant facilities or resources-damaging production are not allowed in experimental zones. Constructions in outskirts of reserves should have no damage to reserve's environmental quality.

Besides, there are two important ministerial regulations concerning nature reserves' management. One is *Regulation for Nature Reserves of Forest and Wildlife Type*, issued in 1985 by former Ministry of Forestry and approved by the State Council, another one is *Regulation for Land of Nature Reserves*, co-issued by former State Land Administration and State Environmental Protection Administration (SEPA) in 1995 (Xue 1998).

2. The Present Status and Problems for Resources Development within Nature Reserves

Though resources development activities within nature reserves are not allowed based on the current legislation, in fact, almost every reserve, more or less, has been practicing resources development activities within buffering or experimental zones nowadays, in order to resolve financial problems. Some reserves have a long history for resources development and have formed industries with a huge of benefits (Xue and Jiang 1994a; Xue et al 1995).

(1) Categories of resource development

The industries and activities for resources development in reserves can be summarized as follows:

- *Tourism.* Tourism is a most important and more and more popular industry in nature reserves. Many reserves have developed eco-tourism services and corresponding facilities such as accommodation, transportation and exhibition museums, etc. The main profits for reserve administrative institution are entrance fee as well as various tourism services. Eco-tourism development is increasingly a most important revenue industry in nature reserves in China. The net income for tourism service accounted for 54% of whole revenue in nature reserves on an average of 77 reserves in 1998 based on a questionnaire survey.
- *Plantation and captive animal raising.* Reserves have an advantage over wild plants and animal resources. Many reserves cultivate wild plants for medicinal herbs and economic crops of tea, tobacco, fruit and vegetable for commercial use; some reserves run nursery for breeding wild trees to use as ornamental plants or city green trees. Captive wild animal breeding is also carried out in some reserves for specimen, zoo exhibition and medicinal use. Livestock, sometimes, is an industry in several reserves of grassland category.
- *Resource processing industry.* Some reserves use the local resources for processing commercial goods. For example, Wuyishan Reserve possesses rich baboon resources in the experimental zone, and the reserve organizes local people to process baboon handicrafts and canned baboon shoots; Liangshui, Damingshan and Jigongshan reserves run some timber processing factories.
- *Resource harvest.* Many reserves harvest the renewable resources within buffering zones and experimental zones annually, such as hay, reed, baboon, timber, herb medicines, etc. Resources collection is a main source for many reserves. Based on a questionnaire investigation to 77 reserves, it amounted to total 39.864 million yuan (Chinese currency, 1 USD=8.27 yuan) for resources collection in 1998, accounting for 23% of whole revenue on an average.
- *Hydroelectric engineering.* Some reserves have rich hydroelectric resources, and a lot hydroelectric power stations have been founded accordingly within these reserves. The commercial electricity has been supplied to local communities and round industries.

(2) Benefits of resource development within nature reserves

The resources development has produced obvious benefits in economic, social and environmental forms.

- *Economic benefits.* Due to different scales for resource development, economic benefits are at various levels among the reserves. For example, Changbaishan Reserve can earn 10 million yuan yearly only for eco-tourism business, mainly from entrance fee and transportation service (Xue 1997, Xue et al 2000). This revenue can constitute 60% of whole annual budget in the reserve. While Jiuzhaigou Reserve can pay 100% of whole reserve's budget. It got 50 million yuan for net income from eco-tourism in 1999 except 15 million yuan for tax paid to the local county government. In general, the revenue level for majority of reserves is about 0.2~1.0 million yuan yearly and constitutes 20%~80% of their whole budgets.
- *Social benefits.* The industries for resource development within nature reserves have enabled reserves to invest money for conserving facilities and ensured a normal operation for the administrative work. Reserve's industries can also create a lot job positions for reserve itself and local communities. For instance, the religious tourism in Dinghushan Reserve creates more than 500 jobs for local people. This can actually promote local economy development and improve local social stability.
- *Environmental benefits.* Resource conservation and sustainable development can be mutually supportive each other. Currently, most reserves in China are short of fund and the financial problem has largely limited reserve's management and conservation work. The revenue from resource development can greatly support reserve's normal conservation and improve staff's working and living conditions, and conversely, it can ensure conservation. On the other hand, the resource developments within reserves are usually based on sustainable use and environmental damage is minimized. So it is helpful to conservation sometimes. For example, as local people use electricity as fuel instead of cutting trees, the

hydroelectric engineering is both beneficial to conservation and economy (Xue and Jiang 1994a).

(3) Problems of resource development within reserves

- *Problems in legislation.*

At first, the legislation system for reserve management is not sound. Though a lot of laws and regulations concerning natural resources management and environmental protection have been promulgated, there are very few legislation specified for nature reserve management, being far from a sound legislation system. By far there is no specific legislation on reserves at law level issued by the People's Congress. The existing legislation is *Regulation of Nature Reserves* issued by the State Council. However, even under the Regulation, it is short of detailed rules, standards and guidelines.

Secondly, the stipulations are not clearly identified. Not only does the existing legislation has very few provisions involving in resource management within reserves, but also the limited articles are not distinctly identified the substantial problems. For example, all the three existing regulations have not obviously provided reserve's land tenure and right of land use. Actually most reserve administrative institutions have no land tenure or land use right. It makes confusion for reserves' resource management and gives rise of a lot of conflicts between reserve's administrative institution and local government or local communities.

Thirdly, the existing legislation has not practiced well. The legislation stipulates that no resource development activities are allowed in core zone and buffering zone, but actually many development activities occurred in buffering zone even core zone. However, no any punishment has been used to the cases that were against legislation.

- *Problems in policies*

Due to many factors such as financial pressure and administrative system, the competent governmental departments have taken an ambiguous attitude on resource development within reserves. They have never opposed it and nor encouraged it. Sometimes, they issued some documents and said some official words, but they have never cared of what happened for documents' implementation. Indeed there are no clear policies to guide reserves how to use the resources in a sustainable way.

Firstly, there is not guiding principles for resource development to indicate which kind of resource can be developed, in what mode, under which conditions, and how to allocate the benefits. Secondly, no catalogue exists to guide reserves for which industry, such as tourism, agriculture, forestry, livestock, processing and commercial business, is suitable to different reserves. Thirdly, resource development has no target. It means some reserves have already got a high level for revenue, but they seek more and more profits, resulting in environmental damages finally. The fourth is no standard for disciplining development activities including tourism service, even some development projects were not subject to EIA procedure. Finally, it is short of monitoring for the development results.

- *Problems in benefit allocation*

Benefit allocation is very sensitive for relationship between reserves and local communities. Some reserves take local government, communities and farmers into account for resource development. They use the revenue to invest construction of public facilities for local communities, or help local people by introducing advanced techniques to develop local resources in sustainable way. These reserves have a peaceful coexistence with local people. On contrary, some reserves do not look after local benefits and they earn money only for themselves. The conditions for staff living have largely improved in these reserves through resources development, but the local farmers have not got any improvement for their living after the reserves established. Even the local

people's living gets worse than before because their resource use has been prohibited after reserves established. Consequently, in some region, conflicts of land ownership are serious between reserve's administrative institutions and local governments. Furthermore, poaching and illegal resource harvesting happened frequently in some reserves.

- *Problems in administrative system and demonstration*

The administrative institutions of reserves should be law-enforcer on behalf of State. Their duties should be to protect reserve's environment and natural resources from damage by enforcing State's laws and regulations, and demonstrate local people how to use resources in sustainable way. If reserves develop resource themselves, they will act as both law-enforcers and law-enforced targets. This will make chaos in reserve's administration. On the other hand, reserve should play a demonstration role when they develop resources so that they can show local people how to coordinate conservation and development and how to use resources in sustainable way. Due to some reserves' demonstrations were not appropriate, they have played an adverse function for local communities to use their resources.

3. Recommendations for Policy Reforming on Nature Reserve Management

(1) Revising the current legislation

It is suggested to revise "*Regulation of Nature Reserves*" and "*Land Regulation of Nature Reserves*" to identify the items which are important to resources management within reserves, in particularly,

- To identify the land ownership. In China all land belongs to State or collective by China Land Law, and land ownership in most reserves belongs to the State. However, local government usually possesses reserve's land ownership, rather than reserve themselves. The regulations should identify the land ownership to reserve after it is established.

- To identify whether reserve has right to use the resources inside. Current regulations have not clearly authorized reserve's right to use the resources. But actually they do use the resources in most reserves. So regulations should empower reserves for both rights of resources protection and sustainable use.

(2) Formulating new policies

The competent governmental departments should specify the policies to standardize the modes of resource development within reserves by identifying following items:

- Which categories of reserves can develop the resources;
- Which kinds of natural resources can be developed by reserves;
- Which industries can be operated in reserves;
- What scale level for resources development can be allowed in reserves;
- Which modes can be selected for reserves' industries.

(3) Making out management plan for resources development

Reserve's resources development should be included in the reserve's management plan and approved by competent authorities. The purposes of this kind of development activities should aim at two objectives of demonstrating resources sustainable use and supplementing financial shortage. So the developments should be limited for scale, and the activities should be described in reserve's management plan, with the items of:

- The objectives for resources development within reserves;
- The targets for profits, i.e. proposed proportion of revenues in whole budget;
- The partners of the development activities, specially taking local community into account;
- Benefits sharing, particularly considering coordination with local government;
- Operational details, such as available funding, facilities, human resources and so on.

(4) Promulgating a series of technical standards

Besides laws and regulations, technical standards are essential to a sound legislation system for reserve management. Currently there are few standards available to reserve management in China. It is suggested that SEPA, as the comprehensive administrative department, should draft and promulgate a series of technical standards to guide reserves' resources developments. These standards should include:

- *A revised national standard of protected area category classification.* In China, only the name of "nature reserve" represents all protected areas, except "scenic spot" and "forest parks" which are resort places special for tourism. The existing standard of category classification refers reserves as all six categories of protected areas by IUCN standard. So a new revised standard is needed to distinguish strict reserves from other five types of protected areas that may allow resources development inside.
- *Some practical guidelines for resources development activities.* They may include industry selection, used techniques, environmental requirements, service scopes, professional standards, marketing practice, etc.
- *Eco-tourism standards.* As tourism is a most popular kind of resource development in reserves, it is necessary to develop a national standard for eco-tourism, including definition, principles and guidelines.

(5) Establishing monitoring system for the resource development

An efficient monitoring system should be introduced to ensure the resource development in accordance with reserve's conservation objectives. The monitoring system may include:

- *Reporting system.* The competent governmental departments concerned should request each reserve to submit reports for their economic activities regularly, and require some projects to be subject to approval procedure;

- *EIA system.* The resources development projects in reserves should be subject to environmental impact assessment (EIA) and environmental monitoring program, in order to minimize environmental damage.
- *Inspecting system.* The competent governmental departments should often make field investigation to inspect the economic activities in reserves, and correct the adverse practices in time if necessary.
- *Monitoring system.* Non-governmental organizations, journalists, conservation experts, local communities and public should be allowed to monitor the reserve's resources developments.

(6) Reforming economic policies

To enliven reserve's economy and accord with the market economy, some mechanisms should be introduced to reserves' management. These mechanisms are mainly proposed as follows:

- *Share-stocking mode.* It is a popular economic mode under market economy mechanism, and the mode can be introduced to reserve's economic developments. For example, some tourism corporations can be operated as a share-stocking company joining by government, reserve, local communities, industries, social entities, private sectors and individuals.
- *Incentive mechanism.* Government can use incentive measures by providing with policies of taxation-free or taxation-reduction and lower interest loan to encourage reserves to develop some environmentally-sound projects (Xue and Zheng 1994). On the contrary, government can also use economic means by high taxation, fine and compulsory business closing to punish the projects which may produce environmental risks.
- *Foundation system.* It is a tentative method to found a national foundation to support some environmentally-sound resources development industries, such as eco-tourism and purchasing right of land use. The foundations alike can also be set up in provincial and municipal levels.

- *Investment policy reforming.* Government investment should be fixed in a range with proportion of whole reserve's annual budget. As a whole, Canadian government invests 75% of total national parks budget and the rest 25% is from parks' revenue. China may fix 50%-75% for governmental investment in general.
- *Ecological compensation taxation system.* Nature reserves supply much ecological services to around areas by water conservancy, CO₂ fixation, fresh O₂ release, soil protection, climate adjusting, and so on. The benefited entities should pay ecological compensation fee to reserves for their conservation expenses. This system has been practiced in some places and it should be extended to more reserves.

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