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Sustainable management for nature reserves of Fujian Province in China

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Abstract: Rapid development of nature reserves in Fujian Province has raised the most important current issue on how to manage the nature reserves in an effective and sustainable manner. The present status of the effective management of nature reserves in Fujian is systematically evaluated from the aspects of management conditions, management measures, scientific research basis and management effects in the paper. Furthermore, the paper puts forward some proposals as follows: enhance sustainable management consciousness among supervisors, harmonize management and resources exploitation, construct the reciprocal mechanism between management and community participation, strengthen scientific research basis and vitality, and quicken the pace of legislation and institution reform. References 8

Key words: sustainable management; nature reserves; Fujian Province

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According to official statistics, by the end of 1998 there were 54 nature reserves, with a total area of 241 941 hm², accredited by the State Council and local authorities of different levels in Fujian Province. The rapid development of nature reserves brings multiple economical and social benefits to local people, including improving the quality of ecological environment, safeguarding natural resources and bio-diversity, and facilitating the sustainable development of economy and society. However, some critical management problems that restrict the further development of nature reserves have occurred in the new era. The most important current issue is how to manage the nature reserves in an effective and sustainable manner.

1 Evaluation on the present status of effective management of Fujian's nature reserves

Based on the field investigations and the wide-ranging consultation from experts, XUE Da-yuan, a scholar from Nanjing Institute of Environmental Science of China, put forwards a system of criteria for evaluating nature reserve's effective management^[1].

1.1 Evaluation on management conditions

Survey indicates that in all 54 nature reserves only 19 of them have set up administrative structures and allocated the total of 267 administrative personnel. The others often remain in the state of "No threes", namely "No organ, No staff, No demarcation", so in essence there exists no administrative work. But even in those nature reserves with established organs, the manpower vacancy also exists and researchers occupy a small proportion. Due to resolved personnel quotas easily and reliable funds, the high-class nature reserves usually

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possess better management conditions than the lower-class ones, which also means “national > provincial > urban > county”.

Over a long period of time, in the gradation management system of Chinese nature reserves there exists a more serious dislocation of responsibility^[2], which the higher authorities commit the responsibility of management, nevertheless no corresponding amply allocating funds, to the subordinate organizations. Meanwhile, the nature reserves often situate in the poverty-stricken mountainous areas. As a result, it is very difficult for overwhelming nature reserves to get the necessary funds. Statistics reveal that only 17 nature reserves within the whole province find the regular fund channels, through which they can gain limited input, and other 37 don't have at all. Fund shortage gives rise to the difficulties of infrastructure construction directly. In the Fujian survey, about 1/3 of all nature reserves never conduct any capital construction in the whole year, seriously affecting the daily work of management and enforcement.

1.2 Evaluation on management measures

In order to guide development and provide policy guaranty for standardizing management of nature reserves, provincial government works out *Plan for the Development of Nature Reserves of Fujian Province (1996~2010)*, but in practice the plan has not been implemented effectively. What's more, local authorities and related departments have rarely formulated the corresponding development plans for local nature reserves and concrete guiding principles for action so far. Meanwhile, up to now no special provincial laws or regulations have been drafted, and each nature reserve has not drawn up the detailed executive rules for their own effective management yet. Faced with a lack of unified penalty norm to the illegal behaviors and the extensively existing phenomena such as “substituting power for law”, it is very urgent to establish the sound systems of law or regulation on nature reserve's management.

1.3 Evaluation on scientific research basis

Scientific researches on nature reserve's management are mostly fragmentary, and those achievements are still far from the administrator's needs at present. Survey shows in the whole province only 8 nature reserves, of which Wuyishan, Meihuashan, and Longqishan even publish the scientific inspection reports, have conducted basic resources investigation. The others at most work out the preliminary design plans, never find out the exact situations of regional geography, biological resources types, social and economic development of their communities.

There is little opportunity for the on-the-job staffs to receive the skill training and pursue further studies due to the scarcity of funds. Statistics reveal that professionals with middle-high title of technical post, of whom the old is growing to a large percentage, only make up 9.8% of total in-service staffs. On the other hand, it is very difficult to attract the outstanding professionals, especially some young researchers, because of poor transportation and very low income.

1.4 Evaluation on management effects

With the background that China's nature reserves have been established along the notion of the Western countries' National Park or Protected Area, a segregation model with local community, over a hundred years ago, the nature reserves bear great pressure from increasing demand of forest products by local governments and people who are eager to develop the economy. In dealing with the relationship between conservation and community development, and promoting local community participation in nature reserve's management, the current participation system lacks incentives for local people to get involved in resources management. The conflict between conservation and local development has become the most serious one among all the issues related to effective management.

2 Thoughts on sustainable management of Fujian's nature reserve

2.1 Enhance sustainable management consciousness among supervisors

The above mentioned problems in nature reserves management occur mainly due to following factors: many

local governments think the management of nature reserves is discordant with the economic development as their central task, and some leaders even fail to realize that well managed and constructed nature reserves can yield constant economic, ecological, social benefits, naturally they haven't brought their management under the overall planning of economy and social development. Driven by economic interests, some short-sighted local governments aggravate haste and undirected development, and could not effectively prohibit the criminality in the natural reserves which results in the frequent illegal cutting and poaching in proportion to density of population^[3]. To draw to a point, the primary tasks today are to promote a better understanding of importance of nature protection and sustainable management among the supervisors. ①The establishment and management of nature reserves should be listed in plan for the development of local economy and society, including the overall plan, regular transfer funds, fixed personnel quotas, etc. ②In practice, governments of different levels must realize their responsibilities and duties, and build the explicit systems of reward and punishment. ③Make full use of People's Congress, People's Political Consultative Congress and news agencies to strengthen superintending on the governmental execution.

2.2 Harmonize between management and resources exploitation

The establishment of nature reserves contributes greatly to protecting the natural ecological environment and biological diversity. But the purpose of it is not to protect or the sake of protection, but to exploit the natural resources in a reasonably well-planned and long-lasting term^[4]. That is why it is so important to achieve a harmony between exploitation and management. From the practice of moderate exploitation of nature resources in China, some successful modes are generalized as follows^[5]: ①Deep resources processing mode. e. g. Snakes Island & Laotie Mountains Nature Reserve in Dalian City, Liaoning Province, extracts snake venom to develop quite a few new medicines. ②Cultivating and processing of special animals/plants mode. e. g. Kuerbin Reserve in Xunke County, Heilongjiang Province, uses chokeberry to produce beverage and ratafee. ③Eco-tourism mode. e. g. the famous Zhangjiajie Nature Reserve of Hunan Province.

After comparing these modes of direct exploitation of nature reserves, experts and nature reserve's administration both tend to develop tourism, especially the kind which is planned scientifically and designed on the base of sustaining ecology^[6]. Eco-tourism can bring substantial economic, ecological and social benefits. To be specific, it can accelerate economic development, enhance environmental protection awareness in public and promote acculturation. These benefits are in consistence with the goal of nature reserves, but the development of eco-tourism also brings some problems that might be ignored. ①The tourists will surely affect the stability of ecological system, damage the ecological environment and put heavy pressure on nature resources. ②Major functions of reserves will deviate. Since it is quite possible for them to lay more emphasis on business instead of management, the main functions of protection and supervision will be weakened. ③Driven by economic interests, they are apt to hold individual proprietorship and exclude the interests of the communities.

So, in order to balance management and resources exploitation, we should concentrate our efforts on the following four aspects: ①Recognize the orientation of nature reserves. The primary functions are protecting and supervising the natural environment and biological diversity. The premise and the ultimate purpose of business operations is to better our nature conservation. So business operations should not distract or deviate our major concerns and take the place of protection as the final goal. ②Choose carefully the operating items. Consider first the nature conservation and choose those items that prevent the harm from the resources and landscape within the bearable ability of environment and landscape, and within the permission of national policy. These items should be taken into deep account together with other concerns to produce an extensive spurring on the regional economy. ③Divide the function areas reasonably. In the core areas of ecosystem, rigid protection should be exercised against any human violations. In the buffering and experimental areas, on the ground that these activities must not hinder the protection of environment, preferential policy should be established to encourage the coordination of protection, scientific research, education and business. The reserves can improve the ability of self-supporting. ④Formulate "play rules" as soon as possible. To make sure the business operations running on rules, we should formulate

relevant rules and regulations, which stipulate the range and degree of exploitations, the way the administrative organizations participate in the business operations, and the distribution of income, etc.

2.3 Establish the reciprocal mechanism between management and community participation

For a long time, the policy that the nature reserves follow has been mainly a rescue-focused one, which forces a superincumbent management system by administrative means^[2]. This system leads to antagonism between the communities and reserves. One typical example is prolonged disputes over obscure reserves' boundary and landownership. Thus one of the urgent problems now is to find a better mode of cooperation between reserves and communities, which can encourage the residents of communities to actively participate in nature conservation. In the joint project undertaken by Wuyishan Nature Reserve and Australia, some scholars propose to found a shareholding tourism cooperative^[9], which can attract the local residents into active participation in conservation management. This in fact is a practice of the new community co-management mode. Community co-management refers to the nature reserve management mode that communities can participate in decision-making, execution and evaluation of protection scheme and manage the nature resources jointly with the reserves' administration^[7]. In comparison with conventional management mode, community co-management holds such characteristics as openness, participation, and mutual benefits. Because it gives a full consideration of economic benefits of reserves and communities and specifies clearly their obligations, rights and benefits respectively, this mode eases the conflict between two sides. In recent years, subsidized by Global Environment Fund, experiments carried out in Shanxi and other provinces have brought about these positive results^[7]: ①Community co-management projects promote economic development. ②Training and popularization of agricultural techniques build up farmers' ability of self-advancement. ③Spreading of firewood-saving technology reduces the consumption of short ends. ④Ecological environment is improved and awareness of importance of nature conservation is enhanced.

The author believes that community co-management is a comparatively ideal mode of management with community's active participation and operation as the theme. But in China today, the factors like "small peasant economy" ideology, public indifference to environment protection, lack of self-discipline make its practice hard. Thus community co-management nowadays in China has to be a mixed cooperation mode that retains, to some degree, the compulsive elements such as administrative and legal power. With the development of society, these elements will phase down and community co-management can be achieved in the real sense. Now, to meet the demands of current economic development, all levels of governments and administrative organizations of nature reserves should realize the importance and the implication of community co-management and forsake the traditional thoughts of enclosed protection so that they can adjust the management mode accordingly and reform the existing management system and administrative organizations. Meanwhile we should choose several reserves that have made some experiments as the experimental units, strengthen the cooperation with relevant organizations both at home and abroad, and quicken the pace of community co-management experiment. Thus we can learn more from their practice and generalize the community co-management modes with Fujian characteristics. Furthermore, their practice may produce model effects that will bring the modes to the whole province and the whole nation.

2.4 Strengthen the scientific research basis and vitality

The scientific capability is the core element of facilitating the sustainable management of nature reserves. Facing with poor scientific facilities and low quality of administrative personnel, it is very imperative for us to take initiative measures to reinforce the scientific research basis and vitality of nature reserves. ①Formulate preferential policy and improving the working condition of nature reserves continuously in order to attract many outstanding young professionals and stabilize the on-the-job team. ②Send some backbone members to institutions of higher learning for further study, and frequently conducting the short-term training courses for all in-service staffs. ③Develop co-operation with international organizations concerned through all kinds of channels such as mutual visit each other, exchanging research materials, and attending the seminars to pursue the advanced technology and management modes. ④Encourage and supporting scientific research institutes to launch a series of plans such as the on-the-spot

investigation, fieldwork teaching, corresponding aid, etc. ⑤ Give full play to the professional knowledge or skills of the retired workers and researchers in the nature reserves, or inviting the famous scholars both home and abroad to be scientific research and management counselors. If possible, establishing “Consultative Committee of Experts” to guide, program or evaluate scientific research development of nature reserves effectively.

2.5 Quicken the pace of legislation and institute reform

Legislation is a key method of assuring the standardization, normalization and legalization of nature reserve's management. International and domestic experiences have stated clearly that the nature reserves with high-efficiency management almost possess the intact rule systems. As far as Fujian Province is concerned, at present the most important task is to lay down “stipulation on management of nature reserves in Fujian Province”. Meanwhile, the approved nature reserves before 2000 year should draft the corresponding management rules on the basis of their own characteristics^[8]. In order to improve the management efficiency to the maximum, those drafted laws or regulations are not to be firmly entrenched, but to enrich their contents, enlarge the administrative scope and raise the management standards according to the ever-changing objective conditions. Legislation alone can not solve the existing problems completely, we also have to enforce the law strictly through the authorities institutes in practice. To eradicate the origin of function break-up and consolidate the nature reserve's management order, the author proposes to set up the special organ “Administrative Bureau of Nature Reserve in Fujian Province”, which administers in unison the affiliated nature reserves and should be bestowed to the great administrative authority on personnel, materials and finance concerned the nature reserves. In addition, it is very urgent to accelerate the pace of establishing the institutes of different levels. By the end of the tenth five-year plan, over 95% of all nature reserves in Fujian will have established sound mechanisms and allocated sufficient staff.

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福建省自然保护区可持续管理

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摘要: 如何有效实现自然保护区可持续管理是当前福建省自然保护区所面临的最大的现实问题。首先从管理条件、管理措施、科研基础和管理成效等 4 个方面对福建省自然保护区的管理现状进行系统评析, 进而指出要实现自然保护区的可持续管理, 应着力采取以下几项措施: 提高可持续管理的意识, 实现保护区资源开发与管理的协调发展, 建立社区参与和保护区管理的互动机制, 增强科研基础和活力, 加快立法和机构改革步伐。参 8

关键词: 可持续管理; 自然保护区; 福建省