Remembering the Ultimate Goal of Environmental Protection: Including Protection of Impoverished Citizens in China's Environmental Policy

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Abstract The life of impoverished people can be damaged by adverse environmental conditions, but these people can also be harmed by environmental conservation programs, particularly when the guiding policy ignores their needs. To improve the social and economic effectiveness of environmental protection, governments must understand that the ultimate goal of environmental protection is to improve human livelihoods, not just restore vegetation. The elimination of poverty by the development of sustainable, long-term enterprises is a precondition for successful ecological restoration.

Keywords Cost-effectiveness of environmental protection · Elimination of poverty · Payment for ecosystem services · Green enterprises · Livelihoods

INTRODUCTION

Sustainable development (environmentally sound economic growth) is an increasingly important socioeconomic goal (Sachs and Reid 2006). Therefore, improvement of the country's forests is a primary goal of the national forest development strategy in China (Liu and Diamond 2008; Wang et al. 2007; Cao et al. 2009; Zhou et al. 2007). China's current environmental protection strategy dates back half a century, to when Chairman Mao called for a "Green Motherland" in 1956 (Jiang 2005). This philosophy was strengthened in 1978 by implementation of the Three Norths Shelter Forest System Project and in 2000 by a series of huge new forestry programs. For its Six Key Forestry Programs alone, China invested 183.5 billion RMB (ca. US\$27 billion at the 2008 exchange rate) from 2000 to 2005, and will invest a further 539.8 billion RMB over the next 4 years, covering more than 97% of China's counties

and reforesting 76 million ha (Wang et al. 2007). However, although this environmental restoration is essential, the environmental protection strategy has seriously damaged impoverished Chinese citizens by failing to consider their economic and other needs. This poses serious policy and ethical challenges. In the present study, our goals were to evaluate potential links between the environmental policy and its social and environmental sustainability and to discuss the potential for an improved approach.

RESULTS—DAMAGE IS BEING DONE TO POOR RURAL RESIDENTS

Rural residents in China often become impoverished when environmental conservation projects are implemented because most such programs are not accompanied by economic development assistance or long-term compensation payments. For example, the lack of payments to herders affected by grazing restrictions under the Natural Forest Conservation Program (NFCP) have forced livestock grazers to purchase grass to feed their livestock. This cost an average of US\$22 per year, which amounts to 10% of their typical income of US\$216 in 2005 near Yan'an City, with similar effects on farmers, whereas former forestry workers have lost nearly 23% of their net income due to bans on forestry activities. As a result, 34.9, 47.0, and 59.8%, respectively, of farmers, livestock grazers, and forest workers in Northern Shaanxi Province believed that their livelihoods had been adversely affected by the ban on logging and grazing imposed by the NFCP (Cao et al. 2009). These changes will affect an estimated 20 million people, leading to a net loss of about RMB2.3 billion in income for these people as a result of the NFCP (Xu et al. 2003).

In addition, even though most trees planted in China have been planted by poor farmers, their payments have been small or nonexistent. Before 2000, a typical farmer near Yan'an City was compelled to perform afforestation for an average of 9.7 days per year, without payment by the government. Since 2000, farmers must continue tending the planted trees without compensation for an average of 21.7 days per year (Cao et al. 2009) because the trees must grow well for them to continue receiving annual subsidies amounting to 1500 to 2250 kg of grain per hectare in compensation for transforming their farmland into forests under the Grain for Green Program (GGP). However, no other subsidies are provided after grasslands have been reforested, except for about US\$91/ha to purchase seedlings or seeds (SFA 2007). Since no economic development assistance is provided by these and related forestry programs, China's displaced farmers will have no way to obtain a livelihood through sustainable economic activities. As a result, a recent study noted that 37.2% of the project participants in Shaanxi Province, 34% in Guizhou Province, and 29% in Ningxia Province planned to return to farming and herding livestock when the government's support payments stop (Cao et al. 2009). Therefore, much of the restored vegetation is at risk of being converted once more into farmland and rangeland, compromising the sustainability of the project's environmental achievements.

Compared with the Key Forestry Programs, the protected areas built under the GGP are likely to undergo greater levels of damage by local residents because they have received little compensation from the central government. This reserve approach may have backfired, because local resident income decreased in project areas, most of which are located in impoverished regions, after the banning of farming, logging, and grazing led to severe shrinkage of parts of the economy based on the newly protected resources (Xu et al. 2003), with no measures taken to offset these losses by developing new industries that could employ these workers. For example, Yunnan Province will lose RMB500 billion in GDP per year as a result of biodiversity conservation in Nujiang valley (Zhang 2004; Wang and Zei 2006). I found no reports that the central government has provided any subsidies to compensate residents for this loss, therefore the local population of 247 000 will pay the huge cost of this ecological protection. Although the regional government provided a one-time payment of \$7000 to \$12 000 per household under the Qinghaihu Protection Program to encourage nomadic herders to build houses and livestock enclosures, herders have found it hard to survive on this level of support (Xin 2008). For those who have been resettled elsewhere, the low-status jobs that are the only form of available employment, combined with high crime rates in their new villages, have caused serious social unrest (Xin 2008).

DISCUSSION

Socioeconomic welfare and environmental conservation are complementary because the environment provides the resources that support human lives, and the connection is particularly strong in rural areas, where most livelihoods depend on the exploitation of natural resources. But the relationship between conservation programs and poverty alleviation is ambiguous because the wealthiest citizens benefit most from conservation, while the poorest people bear most of the costs (Kerr 2002; Pagiola et al. 2005). Conservation programs cannot be sustainable unless service recipients are satisfied that they are receiving what they are paying for. Once they cease paying, neither poverty reduction nor resource management objectives will be reached (Pagiola et al. 2005). Cost-effective policy interventions must therefore account for both long-term alleviation of household poverty and the potential for environmental improvement (Agudelo et al. 2003). Policymakers must seek financial incentives that will provide a sustainable long-term livelihood for those affected by conservation programs. In the absence of appropriate long-term incentives, rural residents affected by conservations programs may be forced to return to their former activities, often in less suitable areas (particularly areas not protected under the programs), which both deepens their poverty and damages the environment (Börner et al. 2007). This process provokes resentment and escalates boundary disputes at the edges of protected areas, making this form of conservation an inherently unsustainable approach to environmental protection (Mez-Pompa and Kaus 1999; Scarborough 2003). The vulnerability of such programs may be exacerbated by unjust or ineffective policies, possibly even compromising the goal of environmental protection.

Poverty and environmental degradation combine to increase hunger and endanger human health (Kates and Dasgupta 2007; Sanchez et al. 2007). The fates of ecosystems and those who inhabit them thus depend on the political and individual alternatives that are available and choices among these alternatives (Kareiva 2008). Environmental goals cannot be achieved without simultaneous socioeconomic development because impoverished people will circumvent environmental restrictions in their desperation to survive (Bonabeau 2002). World leaders now agree that biodiversity and resource conservation must be fully integrated with strategies for economic development to sustain local livelihoods (Kates and Dasgupta 2007). If local people do not support protected areas, these areas cannot last (Engel et al. 2008; Adams et al. 2004).

Environmental conservation scientists face a dilemma: a conservation strategy may be crucially important, but often has negative impacts on poverty (China Statistics Bureau 2006). Since afforestation programs occupy such large

areas, thereby removing these areas from agricultural, grazing, and forestry uses, it is particularly important to establish compensation mechanisms that give the people affected by these land withdrawals incentives to support forest management and conservation (Jiao 2005; Team of Social Harmony 2005). Most newly protected biological resources are located in the most impoverished areas of a country (Adams et al. 2004), and denying access to these resources imposes significant economic and other costs on local peoples whose livelihoods depended on the protected resources (China Statistics Bureau 2006). Given that the programs are often designed to protect resources that benefit the rest of the country or the rest of the world, citizens of more affluent regions who benefit from the conservation programs should also accept responsibility for paying for the work by sharing the benefits with impoverished peoples. Although the Chinese people have become more favorable toward environmental conservation (Sanchez and Swaminathan 2005), the poorest Chinese still need considerable help for both economic development and environmental restoration.

In addition to the lack of long-term development support, large environmental conservation programs fail to address the wide gap between rural and urban residents in the social support services (such as healthcare) that are provided by the central government. For example, rural residents received an average of only 23.4% of China's total social welfare expenditures, whereas urban residents (an average of 33.4% of the country's population from 1952 to 2004) received the remaining 76.4% of these expenditures (Balmford et al. 2001). In addition, 77% of China's educational expenditures were devoted to urban residents even though these residents amounted to less than 35% of the total population (Li et al. 2008). The Civil Administration Ministry reported that in 2004, only 4.0 million rural residents (0.5% of the rural population) received payments to subsidize medical treatment, compared to roughly 100% of urban residents (Drechsler et al. 2007).

Most national and local conservation policies and practices have failed to meet rural development needs or have failed to reduce threats to biodiversity, rampant poverty, and resource depletion. In fact, conservation in China sharply reflects the separation of national policy from the interests of rural communities, as well as the chronic neglect of these populations. Therefore, investing in poverty reduction is crucial for successful environmental policy, and investing in the environment is vital for successful poverty reduction (Sachs and Reid 2006). One appropriate solution would be to support the development of natural resource-based "green enterprises" (Cao et al. 2009). For example, planners should provide employment alternatives for displaced farmers, herders, and forestry workers; should

provide training and long-term funding until they can find new jobs; and should find ways to give the rural poor social benefits (e.g., access to health care) that equal those enjoyed by wealthier urban residents.

Such efforts face a significant problem: Because the poor have far less political power than the wealthy, they are easier to ignore. For example, rural residents with less than one-third of the net income of urban residents accounted for an average of 76.5% of the population eligible to elect representatives to the 10 national congresses that took place between 1954 and 2003, but have historically accounted for only 12.2% of the delegates at these congresses (Cao et al. 2009). One solution to the rural–urban disparity will thus be to find ways for rural citizens to achieve equal representation, so that the majority who are adversely affected by environmental protection programs can request adequate compensation rather than leaving all the benefits to the rich minority. Conservation that sacrifices basic human needs for future gains and that does not require the wealthy to share in the sacrifices of the impoverished is fundamentally unjust. The ultimate goal of environmental protection is to improve all human livelihoods, not just to restore vegetation. Therefore, conservation planners must find ways to improve the livelihoods of local residents through projects that both protect the environment and provide a sustainable livelihood to those who are being harmed by this protection.

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