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## Is biocultural heritage a right? A tale of conflicting conservation, development, and biocultural priorities in Dulongjiang, China

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**Abstract.** The Dulong are one of China's least populous ethnic groups, living at the corner of Yunnan, Tibet and Myanmar. Traditional Dulong agriculture (rotational agriculture with cultivation of *Alnus nepalensis*) includes the cultivation of dozens of local varieties of crops, many of which are underutilized species. In 2003, implementation of the Sloping Land Conversion Program, a national soil and forest conservation program, brought traditional cultivation to an end. Many traditional crops are no longer planted. Because traditional agriculture is central to Dulong culture, the end of this practice threatens the survival of Dulong biocultural heritage. This paper argues that the concept of rights over biocultural heritage must be formally recognized in order to empower traditional communities to be able to contest conservation and development interventions that threaten important aspects of their culture.

Dingba was appointed by the government to represent his hamlet in the 1970s, a post he held until two years ago. During his period in office, he witnessed numerous development projects come and go. "They taught us to construct rice terraces and grow rice, but now the terraces are used for growing

corn for the pigs. Then they encouraged us to raise goats, but because of the wild animals in the nature reserve, I don't know anyone whose goat herds increased. The same for *Bos frontalis*. I've seen so many of these things fail, that I cannot count on this one. Yes, you could say I'm growing that plot of



Picture 1. A Dulong villager introducing his plot of finger millet. (Courtesy Andreas Wilkes)

finger millet in case things go back to the hungry days of before.”

Dingba is a member of one of China’s least populous ethnic minorities, the Dulong. Just over 4000 Dulong live in the Dulongjiang valley, an upstream tributary of the Irrawaddy that runs from Tibet, through Yunnan province and into Myanmar. The traditional livelihood of the Dulong has depended on rotational (swidden) agriculture with cultivation of *Alnus nepalensis*, a nitrogen-fixing tree.<sup>1</sup> The new project Dingba referred to is the Sloping Land Conversion Program, a nationwide soil and forest conservation project that in 2003 finally brought Dulong traditional agriculture to an end.

The implementation of the Sloping Land Conversion Program has increased Dulong people’s dependency on grain handouts, decreased agro-

biodiversity, and threatens to make Dulong biocultural heritage a thing of the past. This paper describes the implementation of this program and its impacts, and discusses what the situation of the Dulong implies in terms of rights in relation to conservation and development. We suggest that the concept of biocultural heritage must be formally recognized in national law in order to empower traditional communities to effectively negotiate the impacts of conservation and development.

### Forest conservation and food security in Dulongjiang

Traditional Dulong agriculture is based on rotational (swidden) agriculture in which when forest is cleared, stumps of *Alnus nepalensis* trees are left in the field and seeds of *Alnus* are planted, so that after cultivation ends, forest cover regenerates quickly. *Alnus nepalensis* has nitrogen fixing properties, so these trees have benefits for maintaining soil fertility for future cultivation.<sup>2</sup>



Picture 2. Stumps of *Alnus* are left in the fields to hasten regeneration of forest and soil. (Courtesy Luo Rongfen)

In 1999, China’s central government announced the Sloping Land Conversion Program (SLCP). Through planting trees on farmland on slopes over 25 degrees and providing grain subsidies,

the aim is to increase vegetation cover and reduce soil and water loss, while also considering the livelihood needs of farmers. Subsidies are given for eight years. Although the government has tried to discourage swidden or rotational agriculture in Dulongjiang since the 1960s, this is the first such effort to come with specific implementation measures. In 2002 the program began to be implemented in Gongshan county, and most of the quota for conversion for the first year was allocated to Dulongjiang and special implementation measures were established. At the beginning of 2003, there was a total of 987.2 hectares of cultivated land in the valley, of which 33% was permanent arable land (35.2 ha. of irrigated paddy and 251.8 ha of rainfed land), and 654.9 hectares of rotational arable land. Most of this latter land was located on slopes over 25 degrees on both sides of the Dulong River. After implementation of the program, apart from retaining paddy, permanent fields, and vegetable gardens, the remaining arable land and all rotational arable fields were included in the conversion program. The national guidelines for implementation of the program stipulate that grain subsidies should be given on the basis of the land area converted. But given the large area converted in Dulongjiang and the long-term low rates of grain self-sufficiency among farming households, the local government decided to allocate the subsidy on a per capita basis, with all rural inhabitants (adult and children) receiving 180 kg of rice per year.

Poverty— as measured by government poverty lines— has always been both widespread and deep in Dulongjiang. In 1995, average net per capita income (including the imputed value of agricultural produce) was just 344 Yuan (ca. 40 USD). From 1995 to 2001 per

capita incomes rose to 684 Yuan, bringing average income levels for the whole valley to just above the national poverty line. For years the government has been providing relief grain and selling grain to Dulong villagers at subsidized low prices. For the local government, the SLCP provides a welcome opportunity to use central government

funding for grain supply to bring Dulong villagers' grain consumption levels to the poverty line. And it must be said that for many Dulong villagers, especially younger people, having an ensured grain supply without having to work in the fields is most welcome. But the conditions on which the grain has been supplied mean there is a price to pay.

*Most farmers think that other households are preserving traditional varieties... But in fact, farmers who have kept cultivating traditional crops are a very small minority.*

### Impacts of the forest conservation program

In 2003, with implementation of the SLCP, all rotational agriculture in Dulongjiang stopped. In 2005 and 2006, the Center for Biodiversity and Indigenous Knowledge, an NGO based in Yunnan, China, undertook surveys and consultations on the impacts of the program, focusing on the implications of the program for the future of traditional Dulong agriculture.<sup>3</sup> The surveys found that:

- ▶ Traditional agriculture supported cultivation of several rare and neglected crops and crop varieties, such as *Setaria italica*, finger millet, *Echinochloa* sp., buckwheat, *Amaranthus* sp., and yam.
- ▶ Many households have not kept the seeds of these crops and have not continued their cultivation. Of 39 households surveyed only six were

still growing at least one type of traditional crop.

- ▶ The range of varieties preserved by those farmers who are engaging in *in situ* conservation is limited, as many traditional swidden crops do not perform well outside swidden fields.
- ▶ Most farmers think that other households are preserving traditional varieties, and assume that if in the future they need to cultivate swidden again, it will be easy to find the seeds. But in fact, farmers like Dingba who have kept cultivating traditional crops in small corners of their permanent arable land are a very small minority.



Picture 3. A variety of unusual grain crops form the basis of Dulong food. (Courtesy Luo Rongfen)

Beyond these specific impacts on agrobiodiversity, because the grain subsidies made under the SLCP will end in three years, all farming households in the valley face great vulnerability. Clearly, the program has substantially resolved grain shortages for rural households, and some say that even after the conversion program ends they do not want to have to renew the traditional farming practices. But current attitudes to the end of traditional agriculture are all conditional on what

will happen in three years' time when the subsidies given under the SLCP come to and end. Those farmers who, like Dingba, have retained the seeds of traditional crop varieties, worry that no suitable new policy will be announced in three years' time. If there is no suitable and credible new policy, many farmers say they will not hesitate to clear new swidden fields and return to their former practices. But when the time comes they may find that traditional crop varieties no longer exist.

And if there is a new policy that enables grain subsidies to continue to be paid, many older Dulong villagers are concerned about the future viability of Dulong culture as a whole. The practice of traditional rotational agriculture relies on knowledge about the characteristics of swidden sites (vegetation cover, slope, aspect, soil, etc), as well as knowledge relating to the treatment of different forest resources and the use of fire. Special farming tools are used to minimize soil erosion

*Traditional agriculture is a core element of Dulong culture, relating not just to ecological knowledge, but also to religion and social organization.*

caused by cultivation on steep slopes, and there is also a lot of knowledge related to the production and use of these tools. Traditionally, Dulong hamlets are based around one patrilineal clan, and elders have a great deal of influence on the use of forest resources, such as the choice of land plots for agricultural cultivation. In the process of cultivation, there are all sorts of joint cultivation arrangements between households, which are based on traditional social ties. And for those Dulong who have not converted to Christianity, cultivation must be preceded by rituals to propitiate

the spirits. Thus, traditional agriculture is a core element of Dulong culture, relating not just to ecological knowledge, but also to religion and social organization.

For many older people, food is a key cultural expression. The SLCP has resolved grain shortages by providing paddy rice for villagers to eat. But traditional Dulong food does not include paddy rice, and most villagers have not been able to eat traditional grains since the SLCP was implemented. Crops other than paddy rice are referred to as "ethnic food", and elder villagers insist that according to cultural views, mixed grains other than rice are good for the health. For example, when mothers who have just given birth rest for a month after delivery, they are mainly given these grains to eat. Also, finger millet is a widely known curative for diarrhea. Many people worry that "the young generation is growing up eating rice—what will the next generation eat?"



Picture 4. Women discussing what the future will be like without 'ethnic food'.  
(Courtesy Andreas Wilkes)

Apart from reflecting changes in diet, this reflects worries about the overall loss of distinctive ethnic culture. Many

elder people worry that: "young people, if they are not good in school and able to find work, then they no longer understand ethnic food, and don't know which wild vegetables to eat and how to plant ethnic foodstuffs, so they are no different from old people just waiting to die". That is, these young people are no longer suited to livelihoods in the Dulongjiang. Other villagers said that "the things that old people eat and how to eat them— if you don't know these things then are you still a Dulong?" From this we can see that rotational agriculture and traditional foodstuffs are an important part of what it means to be Dulong.

### Which rights come first?

The goals of the SLCP are to reduce soil erosion and increase forest cover. At the same time, grain subsidies are used to ensure basic living standards. But the program has traded forest conservation and food security goals for the biocultural heritage of a people, and their ability to pursue sustainable livelihoods without dependence on government hand-outs for meeting their basic needs.

Clearly, which rights one perceives, and which rights one is unaware of, depends on the frame of reference one brings to the situation. When officials view situations such as that in the Dulongjiang, they mostly see extreme poverty, 'backward' ethnic culture and the environmental destruction caused by creating swidden fields. Meeting 'rights to subsistence' and 'rights to development' are prioritized, and the focus of officials' efforts is on ensuring that basic food needs are met while introducing 'advanced' and 'scientific' agricultural production technologies. In this view, Dulong culture has nothing to offer the future.

Ecologists and ethnobotanists have also made studies of rotational agriculture in Dulongjiang,<sup>4</sup> and praised the indigenous wisdom of cultivating *Alnus nepalensis*. But the values that they see in this are the values of forest conservation. Agro-biodi-

*Some experts have suggested that the whole Dulongjiang valley should be made into a 'National Ecological Park'.*

versity— biodiversity with the closest links to ethnic culture— has not fallen within their line of sight. Some such experts are equally aware of

the impacts the SLCP has had, and have suggested that the whole Dulongjiang valley should be made into a 'National Ecological Park'.<sup>5</sup> As with other nature reserves, it is hard to imagine how the management of the administrative structures of such a park could allow for or support genuine Dulong participation in preserving their biocultural heritage.



Picture 5. Taro growing amidst *Alnus* stumps in a newly cleared field. (Courtesy Luo Rongfen)

In August 2006, the Center for Biodiversity and Indigenous Knowledge convened a series of meetings of ordinary Dulong villagers and their elected representatives in the county

People's Congress. For all the Dulong who took part in these consultations, it was clear that rotational agriculture represents a core part of their cultural heritage. The consultations identified several specific feasible and desirable actions that the participants recommended:

- ▶ Promote development of consensus among government departments on the value of preserving traditional crop varieties and traditional agriculture as a whole;
- ▶ Continue to encourage households to conserve traditional varieties in plots of permanent land;
- ▶ Initiate joint experiments with farmers on how to improve the performance of traditional varieties on permanent arable land;
- ▶ Convene seed exchange fairs within and between villages;
- ▶ Allow and assist hamlets to create collective plots for cultivation of traditional varieties using traditional methods;
- ▶ Use digital video cameras to make a DVD narrated in Dulong language documenting traditional cultivation practices to show in schools; and
- ▶ Explore the potential of market-led measures for encouraging agro-biodiversity conservation, e.g. developing food products to sell to tourists.

Officials who took part in the consultations stressed the need for agro-biodiversity experts to undertake landrace surveys, but for the Dulong participants in the consultations, solutions to their current 'crisis' all rely on farmers' involvement with support from the government. This highlights the importance of community-based activities to the conservation of biocultural heritage.



Picture 6. Taro now has to be planted on permanent fields.  
(Courtesy Andreas Wilkes)

'Rights to subsistence', 'rights to development', and 'rights to enjoy an undegraded physical environment' are all rights that are commonly recognized in Chinese government discourses. But what about the rights to cultural practices—the rights to be Dulong in the way that (at least some) Dulong want to be? We see that formal recognition for the concept of **rights over biocultural heritage** is essential in ensuring that 'local communities embodying traditional lifestyles' (CBD Article 8(j))

*Formal recognition for rights over biocultural heritage is essential in ensuring that local communities embodying traditional lifestyles' (CBD Article 8(j)) are empowered.*

are empowered to make effective inputs into how both conservation and development measures affect the multiple, complex and intertwined elements of their lifestyles. A definition of 'Collective Bio-cultural Heritage' has

been suggested by a workshop on traditional knowledge protection and

customary law in Peru, which reads:<sup>6</sup>

"Knowledge, innovations and practices of indigenous and local communities which are collectively held and inextricably linked to traditional resources and territories, local economies, the diversity of genes, varieties, species and ecosystems, cultural and spiritual values, and customary laws shaped within the local socio-ecological context of communities."

In 2004 China ratified the UNESCO Convention for the Safeguarding of Intangible Heritage, which explicitly refers to "knowledge and practices concerning nature and the universe" among its targets for protection. In May 2006 the Chinese government announced a list of 518 elements of intangible culture that would be preserved, but of these, only a small handful related to indigenous knowledge of the environment. Part of the reason for this was that the implementation of the convention is the responsibility of the Ministry of Culture, whose work focuses mostly on the performing arts. But part of the reason lies in the low levels of understanding and awareness of ecological knowledge and practices as an integral part of culture and lifestyle.

Within the next year or two China will also announce a new law on the management of genetic resources. Experts involved in drafting the law are focusing on developing arrangements for fair and equitable access to genetic resources. But as with many such laws it is likely that a limited definition of indigenous knowledge is adopted, focusing on access to and the use of technical ecological knowledge. Without an appreciation of ecological knowledge and practices as



Picture 7. Women weeding upland rice.  
(Courtesy Luo Rongfen)

part of biocultural heritage, it is unlikely that situations such as that of the Dulong will be either addressed or prevented by this new law.

Without formal recognition of the concept of rights over biocultural heritage in national law, and without government-supported mechanisms in place through which indigenous communities can make effective claims, the future for the Dulong—and countless other indigenous experts and communities facing similar challenges—looks bleak. We suggest that concerted efforts are required to gain recognition for the notion of biocultural heritage in policy circles, and to develop measures through which governments' related commitments under the CBD and other international instruments can be realized.

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## Notes

- 1 Yin Shaoting 2001.
- 2 Yin Shaoting 2001, Qi Yinfeng 2006, Gao Yingxing 2003.
- 3 Xiao 2005, CBIK 2006.
- 4 e.g. Long *et al.* 1999.
- 5 Chu and Cheng 2006.
- 6 Cited in Swiderska 2006.

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