



## Regional payments for ecosystem services (PES) scheme funded through monthly salary contributions in Xinjiang, Uyghur Autonomous Region, China

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**Short title:** PES scheme funded by collections made from salaries, China

**Key Message:** A regional public payment scheme (PS) on provincial level was created to match national funding for urgently needed reforestation and regeneration measurements in ecological fragile Xinjiang Autonomous Region. The regional PS is financed through fees on salaries of employees

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### What was the problem?

Xinjiang Uyghur Autonomous Region is located in the northwest of China and is the largest province of China with almost 1.6 million square kilometres (i.e. approximately twice the size of Turkey). It has a fragile ecosystem, which is home to many dry area species of both plants and animals. Xinjiang also accounts for 25 per cent of China's 595 types of terrestrial ecosystems, including 52 different types of deserts, over 30 types of meadows, over 20 types of grassland and over 10 types of forest and shrub land ecosystems. The total forest cover amounts only 4 per cent of the province and is far below the national average of 20 per cent. Over the past century Xinjiang ecosystems have suffered from heavy degradation. These processes got to a point which severely threatens biodiversity. 22 per cent of the wildlife species are under threat, a number higher than China's national average (15 to 20 per cent). The causes of biodiversity loss are seen in intensive economic activities, including industrial production, infrastructure development, consumption and trade, poor management of biodiversity as well as grazing, aquaculture and mining. The loss of biodiversity and the severe ecological degradation are considered to have become a major obstacle to the socioeconomic development of China (UNDP 2005).

### What was done to solve it?

In addition to the continuously on-going ecological degradation in Xinjiang, the seven-month drought in 1997 of the Yellow River and the season of big floods of 1998 in three major river basins (Yangtze River, Huaihe River and Songhuajiang River) brought about several changes in China's environmental and forest policies. The government saw a causal link between the seven-month drought as well as the catastrophic floods and the ecological degradation in specific areas. It responded by designing the Natural Forest Protection Programme (NFPP) which was fully launched in the year 2000 after having successfully implemented pilot projects in the years 1998 and 1999. The NFPP banned, for instance, the

logging of natural forest in millions of hectares in the upper reaches of the Yangtze and Huanghe River (Xiaoyun L. et al. 2006).

In addition to NFPP the Chinese government also launched a policy called Specialized Forest Management. This policy responded to the need for better development and protection of complex forest ecosystems by demarcating them spatially depending on the specific function of a particular forest (economic, ecological or social). Forests were then classified as either commercial or ecological. The classification 'ecological forest' includes forest, brush or open woodland. Labour compensation standard for these three is 4.5RMB per mu and year, 3.5 RMB per mu and year, 3 RMB per mu and year. Following, forests with specific ecological importance have been termed as protection and special-use forests (Sun, C. and Chen X. 2000).

### **Which ecosystem services were examined? And how?**

Different ecosystem services provided by forest and bush land ecosystems were examined including water regulation, biodiversity provision. The aim was therefore to promote the conservation of forest ecosystems in general by using economic incentives.

In a first step, forests and bush land were examined for the demarcation, designation and zoning of ecological forests under the Specialized Forest Management policy. Ecological forests were classified by scale as state, provincial or county ecological forests (Sun, C. and Chen X. 2000).

Since fiscal payments from government budgets for forest programmes are generally prone to a number of shortcomings (high transaction cost, low efficiency in fund use, ambiguity in target beneficiaries), a new approach to this problem came in the form of the establishment of the Forest Ecological Benefit Compensation Fund (FEBCF). The FEBCF has its underpinning in the concepts of the Specialized Forest Management and the legislative frameworks which provide the possibility for compensating stakeholders for the provision of public goods in the form of providing ecosystem services. The FEBCF was also a product of a number of revisions of China's Forest Law of 1979 (Central Tibetan Administration. 2007).

In 2001 the Ministry of Finance allocated US\$ 120 million for the implementation of the programme over a total area of 200 million mu<sup>1</sup> (i.e. 13.3 million ha) across eleven provinces in the country (Xinjiang, Jiangxi, Liaoning, Hebei, Heilongjiang, Anhui, Fujian, Shandong, Hunan, Guangxi and Zhejiang). It was only in late 2004 that the FEBCF was formally launched and the implementation area and supporting fund were doubled to 400 million mu and Rmb 2 billion. Compensating payments to organisations, collectives and individuals serve as incentives to motivate these agency or actors to engage in protection measures and to sustainably manage special use forests. The compensation amounts to Rmb 5 per mu and year for appropriate activities (approx. US\$ 12 per ha at an exchange rate of US\$ 1 = Rmb 6.3). Local and provincial governments are encouraged to provide matching funding. The source of these local or regional funds are charges/fees collected from beneficiaries (organizations, enterprises and individuals) of forest ecological benefits according to the principle of whoever-benefits-pays (Xiaoyun L. et al 2006).

### **What policy uptake resulted from examining the ecosystem services?**

"Payments for Ecosystem Services (PES)" refers to a wide range of compensations made to the stewards or providers of ecosystem services. In light of the growing popularity of PES schemes in China, a Provincial level FEBCF was established in Xinjiang Uyghur

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<sup>1</sup> Mu is a Chinese unit of measurement. 1 mu = 1/15 ha.

Autonomous Region in 1997. Since then funds have been collected from monthly salaries of employees in government departments, institutions and enterprises. From the category of people earning 300-700 Yuan/month, 1 Yuan/month would be collected. 40 Yuan is collected if the monthly salary reached 4,000 Yuan or above. Additional funds have been collected from crude oil enterprises, nonferrous mineral producers as well as from visitors of scenic zones and forest parks through admission charges (Central Tibetan Administration. 2007, Sun, C. and Chen X. 2000).

### **Lessons learnt**

PES schemes can be useful instruments for financing conservation activities when public funding is not sufficient. Local farmers have benefitted greatly from this programme. Up to 50 per cent of the funds have been directly distributed to farmers or their collectives. Between 2001 and 2010 the compensating expenditure for the owner or contractor who has rights to use forest resources reached 80 per cent of the whole found from central government. 20 per cent were used to cover administrative cost. This shows the particularity and strengths of the Provincial FEBCF in Xinjiang.

The scheme seems fit to be scaled up (more than 25 million ha). To what extent people know and consciously support the fact that their payments serve ecological means is uncertain. There is concern that participation in the FEBCF is often not voluntary. Its payments of US\$ 9 per hectare and year are arbitrarily defined by the government and do not compensate the market value for the ecosystem services provided (Xiaoyun L. et al 2006). There might be a risk that this could lead to management activities which are not promoting biodiversity and resilience of ecosystems but rather transform them into more homogenous and in the short and medium term more profitable forest stands.

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