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Assessing the impact of China's priority forest programs on rural household income mobility

By Can Liu, Hao Liu, Wenqing Zhu and Qingjiao Rong

China's policy responses to environmental challenges

At the end of the 1990's, China experienced a series of natural disasters, from severe droughts to massive floods, soil erosion and sandstorms, costing lives as well as billions in property damages and production loss.

The Chinese government then proposed a new environmental strategy, combining continued rapid growth with ambitious targets for resource management and ecological sustainability. This move towards improved management of natural resources can be viewed in the framework of a crisis-response model.

Specifically, this governmental strategy includes six "Priority Forest Programs (PFPs)", which combine objectives of environmental restoration and increasing rural households' income – see the list of programs in the table to the right.

Key findings

From their empirical evaluation results, the researchers found that:

- the main PFP programs, such as the SLCP and NFPP, have **no significant impact on sample households' total income.**
- the DCBT first reduced sample households' total income during initial stages, but show no more significant impact in the later stages

After disaggregating households' total income by sources, however, they find that the PFPs have influenced the composition of households' income overtime, i.e. inducing **higher income mobility (especially after 2003).**

Moreover, such income mobility has **contributed to reduce inequality** amongst sample households in the long run.

The degree of impact in terms of income mobility, however, varies substantially between programs, depending on the **size of the area involved.** It seems that, the larger is the area enrolled in:

- the SLCP and ITPP, the higher the impact in terms of mobility or "flexibility" on rural households' income
- the NFPP, the more "constrained" is rural households' income mobility

While the size of the area enrolled in the DCBT and SDBT seems to have little effect on the residents' income mobility.

The Chinese Priority Forest Programs (PFPs):

SLCP	Sloping Land Conversion Program
NFPP	Natural Forest Protection Program
DCBT	Desertification Combating Program, Beijing & Tianjin area
SBDP	Shelterbelt Development Program
WCNR	Wildlife Conservation and Nature Reserve Program
ITPP	Industrial Timber Plantation Program

The key policies implemented under the Chinese PFPs include, either, governmental subsidies (SLCP, DCBT), restrictions (NFPP, WCNR), and/or economic incentives (ITPP, SBDP).

In order to assess the impact of these programs on rural households' income and income mobility, a team of PEP-supported researchers collected data from a random sample of 3375 households in 15 counties of 6 provinces - Shandong, Shaanxi, Guangxi, Hebei, Jiangxi and Guangxi.



Policy recommendations

According to the researchers, the use of "broadly uniform subsidies" limits the potential efficiency of the PFPs, as well as their impact on equality. Uniform standards may also lead to lesser the production and benefits from croplands.

The researchers suggest that introducing a system of bidding or payment for environmental services (like that of the American Conservation Reserve program), including multi-standard subsidies, could solve these issues of efficiency and equality of China's PFPs.

Subsidy standards should be adjusted in accordance with the market conditions and socioeconomic development. For example:

- **linkage between food price and subsidy standards should be considered for the SLCP and DCBT program**
- **compensation standards should be introduced to narrow the net loss for rural households enrolled in the NFPP and WCNR**

To conclude, the PFPs should be complemented with pro-poor or inclusive development policy measures to help reduce poverty and inequality