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**The Rural Household Income and Poverty Reduction  
Effects of Priority Forestry Programs in China**

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PIERI3 - China Proposals



# **The Effect of Priority Forestry Programs on Rural Household Income and Poverty Reduction effects in China**

## **RESEARCH PROPOSAL**

Presented to  
PEP Network

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## **1. Abstract**

Since 1998, Chinese government has launched the Natural Forest Protection Program (NFPP), the Sloping Land Conversion Program, Desertification Combating Program around Beijing and Tianjin (DCBT), the Shelterbelt Development Program in the Three-Norths (the Northwestern, North, and Northeastern regions of China) and the Yangtze River Basin (SBDP), the Wildlife Conservation and Nature Reserve Program (WCNR), and the Industrial Timber Plantation Program (ITPP), many rural households have been involved to these PFPs, which have affected rural households' income and poverty reduction. Some researchers have taken some researches on the issue, but there is still a great gap to be narrowed. We will use the econometrics methodology to analyze the impact of Priority Forestry Programs on rural households' income and poverty reduction of by use of our collected dataset of 3375 households in 15 counties of 6 provinces. Based on the empirical results, we are going to prepare policy briefs and policy recommendations for policy decision-makers. We will prepare several papers, working papers or an international journal(s) and national journals.

## **2. Main research questions and core research objectives**

With an eightfold increase of per capita gross domestic product (GDP) since 1978, China has witnessed tremendous economic growth over the past three decades (Zheng et al. 2008). Accordingly, Chinese population living in absolute poverty (below a per capita annual income of 637 Yuan in 1995 real price) was over 250 million in 1978, but it reduced to 21.5 million by the end of 2006 (China National Statistics Bureau, or CNSB, 2007). Despite these great achievements, poverty, especially in the rural areas of western China, remains a troublesome phenomenon. Residents living below the World Bank poverty line of \$1 per capita per day amounted to 135 million in 2004 (Chen and Ravillion 2004). In its "Human Development Report 2005," the United Nations Development Program (UNDP) noted that the pace of

poverty alleviation in China has slowed down markedly over the past decade (UNDP 2005). Obviously, how to further reduce rural poverty and increase farmer's income still is a top policy priority to the Government of China.

Forests often play a crucial role in the lives of many poor people. Worldwide, almost 70 million people – many indigenous – live in remote areas of closed tropical forests and another 735 million rural people live in or near tropical forests and savannas (FAO 2006, World Bank 2000). In China, most of its 592 poverty counties are found in areas that are far away from urban centers and have poor traffic access; meanwhile, they tend to possess relatively plentiful forests (State Forestry Administration, 2003). In numerous impoverished places, forestry has indeed been a main source of income for farmers (Liu and Lü 2008).

To enhance the income of its rural residents as well as to improve its environmental and resource conditions, the Chinese government initiated some new programs and consolidated other existing ones of ecological restoration and resource development in its forest sector in the late 1990s, and renamed them as “Priority Forestry Programs” or PFPs (State Forestry Administration, 2002).

Natural disasters in the late 1990s intensified an environmental debate in China and triggered the government to initiate the Natural Forest Protection Program (NFPP) in 1998 and the Sloping Land Conversion Program (SLCP) in 1999. Following successful experimenting during 1998-1999, the NFPP was formally launched in 2000 with an initial investment of 96.4 billion Yuan for the decade (This is equivalent to roughly US\$14.1 billion given the current exchange of \$1 = 6.85 Yuan). A key component of the NFPP was commercially logging bans over 30 million hectares of natural forests in the upper reaches of the Yangtze River and the upper/middle reaches of the Yellow River. In other areas (such as the Northeast, northwest of China and Hainan Province), harvest restrictions were tightly imposed. The SLCP was piloted

in Sichuan, Shaanxi, and Gansu provinces in 1999 and 2000 (also known as the ‘Grain for Green’ program in the international literature). Its primary goal was to convert 14.6 million ha of sloping and desertified farmland into forest and grass coverage from 2001 to 2010. When it was formally launched, the SLCP covered 25 provinces, with a budget of 225 billion Yuan. In addition to the above two mega programs, a number of other efforts of ecological restoration and forest expansion have been consolidated into the following four programs: the Desertification Combating Program around Beijing and Tianjin (DCBT), the Shelterbelt Development Program in the Three-Norths (the Northwestern, North, and Northeastern regions of China) and the Yangtze River Basin (SBDP), the Wildlife Conservation and Nature Reserve Program (WCNR), and the Industrial Timber Plantation Program (ITPP). Together with the NFPP and the SLCP, these programs comprise the six PFPs (SFA, 2005). Rural households have been involved in the implementation of these PFPs, for instance, by the end of 2008, 26.84 million rural households have been involved in SLCP in 25 provinces, and 2.52 million rural households have been involved in DCBT in 75 program counties of 5 provinces (Beijing, Tianjin, Hebei, Shanxi and Inner Mongolia). Household forestlands in NFPP area have been covered for NFPP, SBDP, ITPP and WCNR; in the meantime, some of rural households have inputted their labours and capitals in SBDP, ITPP and WCNR. Chinese central and local governmental agencies have also been encouraging local farmers to find the alternatives for their live hoods and subsistence.

So far, implementing these PFPs has substantially altered the land use patterns in many upland regions, where both a significant portion of the country’s primary forest ecosystems and a high rate of poverty incidence are found. As a result, a large amount of sloping cropland has been converted to forest and grass coverage and many existing forests, including quite some managed ones, have been subject to strict regulation for commercial use, and policies for each PFPs is seen in Appendix 1, and afforestation areas of each PFPs seen Appendix 2.

From the perspective of rural households, the direct effects of these PFPs are reflected mainly in:

- the government subsidies they receive for converting the sloping and desertified cropland or rehabilitating grassland (under the SLCP or the DPBT);
- the government restrictions imposed on their logging, collecting, and even managing practices in case their forests are put under protection for providing more important ecosystems services (under the NFPP or the WCNR); and
- The government incentives offered for them to engage in plantation and shelterbelt establishment and other related activities (under the ITPP or the SBDP).

There exist numerous tradeoffs, most of which can result in changed patterns of land use and production. Induced by the land reallocation and production shift, farmers have to intensify farming and commercial forestry activities on their remaining lands, switch animal husbandry from open grazing to pen raising, or search for off-farm jobs and others in order to sustain their income growth. Therefore, it is expected that following their participation in the PFPs, farmers' income sources and employment structure will undergo major transformation. To be sure, in addition to farmers' own initiatives, efforts, and inputs, the extent and trend of their income and employment changes depend critically on the availability and effectiveness of technical, financial, and personnel assistances provided by the local public agencies. Finally, after the implementation of PFPs, the local ecological conditions have changed which would or might benefit for local production, and further affect rural households' income and poverty reduction.

Key questions of broad interest and major relevance are:

- How has implementing the PFPs affected rural households' income and poverty status?
- What and how has affected on rural poverty reduction by these PFPs?
- What and how has the rural poor been affected by these PFPs? What does the poor gain or lost in the process?
- What policy matters or non-policy matters have affected rural households' income and poverty reduction in China?
- What and how policies should be changed for win-win of ecological restoration and local livelihood and poverty reduction? Some policy scenarios would be prepared for policy decision makers to gain the win-win between ecological restoration and local livelihood and poverty reduction.

The first key objective of the proposed research is **to address these questions empirically.**

Based the empirical results, we will find the policy gaps for policy decision makers, the second objective of the proposed research is that **policy briefs and policy recommendations should be prepared for the policy decision-makers for balance between forest ecological restoration and local livelihood and poverty reduction.** We plan to pursue high uptake of research outputs and synthesis by engagement and communication with policy makers, practitioners and decision makers

At a time when ecological restoration has become a common cause and payment for ecosystem services has been widely promoted in pursuant of sustainable development (FAO 2009, Millennium Ecosystem Assessment 2006), scrutinizing China's recent experience in general and its implementation of the PFPs in particular is interesting. This is because

evaluating the program impacts on participating households' welfare is essential to determine the directions toward which public funding and policy should be mobilized. Lessons learned from China can thus benefit many other countries, especially developing countries that face challenges of both environmental protection and poverty reduction. The third key objective of the proposed research is **to share China's experiences of forest ecological restoration programs and poverty reduction.**

### **3. Scientific contribution of the research**

The impacts of the SLCP on rural households' income and livelihood have received a great deal of attention in the literature. In addition to examining its cost effectiveness and sustainability, Uchida et al. (2005) and Uchida et al. (2007) analyze its influence on eradicating poverty in the countryside. They find that the program has been successful in poverty alleviation, even though poor households may not have benefited the most. Further, their evidence suggests that households participating in the program have already begun transferring their labour to non-farming sectors more rapidly than those not participating in the program. In contrast, using data collected from Sichuan, Shaanxi, and Gansu for the first few years of the program, Xu and Qin (2004) show that it made little difference in affecting farmers' income between. Their conclusion thus implies that the SLCP's role in relieving poverty is limited; the reduction of poverty is more likely driven by the overall economic development, which provides greater opportunities to farmers, rather than the direct subsidies of the land conversion.

Observers also point out that in some cases, the goal of the program is not well understood by farmers; and it may even be inconsistent with their aspirations, which have affected their enthusiasm for participation (Du 2004). According to Xu (2003), the main reasons that some farmers lack interest in the program are partly because the subsidies are not delivered on time and in full, and partly because no appropriate remedies were put in place to address the

restrictions on intercropping in the forested fields and gathering fuel wood. These factors have led to an adverse effect on the livelihoods of the farmers, who not only rely heavily on forest resources but also tend to be among the poorest rural population. Based on case studies in the upper watersheds of the Mekong and Salween Rivers in north-western Yunnan, Weyerhaeuser et al. (2005) also reveal certain negative impacts of the SLCP and the NFPP on the livelihoods of highland communities. Zhi and Shao (2001) claimed that the income of farm households would be improved significantly during the time period of government subsidies. If the subsidies are terminated after the program expires in 5-8 years and farmers are not allowed to utilize their retired lands for economic purposes, they could suffer a loss. In their opinion, the policy that mandates that the proportion of economic forest be no more than 20% has failed to consider the regional disparity and the basic fact that the country has a large rural population but a relatively small amount of cropland. Thus, the government must take steps to improve farmland quality and increase farming productivity in order to address the issue of food supply following the land conversion.

Compared to the SLCP, there have been fewer studies of the socioeconomic impacts of the NFPP and other programs. Using household data, Liu et al. (2005) and Ni et al. (2002) demonstrate that the NFPP had a negative effect on the income of farmers living close to the protected natural forests. With data from 18 counties in Shanxi, Inner Mongolia, and Hebei, Liu and Zhang (2006) show that the DCBT had a positive effect on farmers' income, but the effect varied from county to county, due in part to uneven program investments. However, they did not consider all of the relevant factors affecting farmers' income, including production inputs and household characteristics. To our knowledge:

- Little work has been conducted so far to make an integrated assessment of the impacts of the PFPs. In fact, most of the existing studies have focused on a single PFP, with few

studies dealing with two or more. This is unfortunate given the fact that these overlapping PFPs have all somehow affected farmers' income and their impacts may interact (Liu and etc 2009).

- Most of these researchers used the data of the early implementation period (1998-2004) of these PFPs, and they did not update their data;
- Policies and institutional arrangements have been changed since the early period of these PFPs, for example, the key and most important policies were issued by the central governmental agencies for SLCP in 2005, 2007. Therefore, the impacts of these new policies and institutional changes should be considered.
- Since 2004, The State Council of China and the Central Committee of Communist Party of China promulgated seven consecutive No. 1 documents that focused on rural development issues. Most recently, the No. 1 policy document for 2010 called for greater efforts to coordinate development between urban and rural areas, which was the fundamental requirement of building a moderately prosperous society. Rural policies have been changing since the implementation of these PFPs, which have affected rural households' income and production choices and also affected PFPs implementation.
- The reform of the collective forestland tenure has been implemented since 2003, which has impacted farmers' forestland and forest resource management, and their production choices.
- The literatures focused on income effects of these PFPs and seldom focus on poverty reduction and especially for effects of different clusters (such as the poor and the rich), these PFPs have caused the different impacts on different clusters in accordance with our the results of field trips; and finally,

- Financial crisis has been also affecting the implementation of PFPs and rural households' production choices and income and income sources generated.

In conclusions, there is a great gap in this aspect. We will use our data to analyze the impact of rural households' income and poverty reduction and narrow the gap.

#### **4. Policy relevance**

By the end of 2010, five of these PFPs will be ended except WCNR (2001-2050). Some of these PFPs will be extended, for example, NFPP will be extended to another 10 years, and SBDP will be extended 2 years, and SLCP will be implemented for another stage. After more than 10 years experiences, some lessons could be learned by us. New policies and institutional changes are required by Chinese government. This research proposal has a closely linkages with these policy and institutional changes, we will submit our policy implications and recommendations to the State Forestry Administration, Ministry of Finance and other departments of State Council of China for their updated the new policy and intuitional changes.

The policy relevance of the research program will focus on:

- 1) What new policies should be introduced to balance between forest ecological restoration and local rural livelihood and poverty reduction?
- 2) Are there alternative ways to more efficient to management forest ecological restoration programs in the context of poverty reduction?

One of the key tasks of the Policy Division (Prof. Can Liu is the Division Chief) of China National Forestry Economics and Development Research Center is to prepare policy briefs and policy recommendations for the central governmental agencies, and has gained enough experiences for preparing policy recommendations for policy decision makers. In the

meantime, the team has discussed the proposed research with relevant policy decision makers, who will support the proposed research application.

## **5. Methodology**

In accordance with the distributions of rural households' income and the six PFPs, we selected 15 counties in Jiangxi Province (Xiushui County, Suichuan County and Xingguo County), Shaanxi Province (Zhen'an County and Yanchang County), Sichuan Province (Mabian Yi Nationality County, Muchuan County, Nanbu County and Nanjiang County), Guangxi Zhuang Nationality Autonomous Region (Huangjiang Maonan Nationality County, Pingguo County), Hebei Province (Yi County, Pingquan County and Zhangbei County) and Shandong Province (Pingyi County). These 15 counties are national poverty ones. Except Yi County, Pingyi County, Huangjiang Maonan Nationality County, Pingguo County and Pingyi County, where we selected 135 sample households in 3 townships (one township, 3 villages; each village, 15 households), we selected 270 households in 6 townships (one township, six villages; one village, 15 households, except Zhangbei, we selected 3 townships, 3 villages in each township, and 30 households in each village). The total sample households are 3375 households, the dataset covers 14 years from 1995 to 2008. We used a stratified random sampling method, sample households and villages were randomly selected, after we discussed with local officers from forestry department and other governmental agencies and local economists and foresters, we selected counties and townships. After removing those with incomplete information, we have over 3000 valid balanced household panel dataset, that do not mean that unbalanced panel dataset is not useful, unbalanced panel dataset is still valid for the study.

Broader cross sections and longer time series are two unique features of this dataset. That is, every sample county has at least two PFPs (except Pingyi County, the county do not implement any PFPs as the compared case study sample county) and covers a period of 14

years from 1995 before they were initiated or consolidated to 2008, when their implementation was well underway. Based on such a large and comprehensive dataset, it is more likely for us to remove the influences of covariates, including production inputs and household and village characteristics, and thus enable us to identify the specific effect(s) of each program on farmers' income in a rigorous and appropriate way.

Another feature of our study is a simultaneous assessment of the income impacts and income sources for the general and the different cluster by adopting two different approaches – one based on dummy variables of whether a household participates in a program and the other on the area that has been enrolled in or occupied by the program. We hope that these two approaches will generate a set of complementary findings, which will allow us to draw clearer and stronger conclusions regarding the income effects of the PFPs.

The analytic focus of this proposed research is the impacts of the PFPs on farmers' income and income resources for the general and different clusters (the poor and the rich). While some of the impacts are direct, others are indirect; some are positive, but others are insignificant or even negative. Moreover, the PFPs have a high degree of overlapping both spatially and temporally, confounding the employment and income impacts. This situation implies that examining the effect of a single program in isolation may lead to biased or incomplete findings. Additionally, it is more feasible to disentangle the confounded effects with a large panel dataset containing sufficiently long time series. We hope that our study will be able to tackle these issues and thus capture most, if not all, of these impacts in an unbiased manner.

Generally speaking, rural households' income is determined by their production inputs and other biophysical and socioeconomic factors. Production inputs constitute labour, capital, and land. Included in land are farmland, forestland, and other land for growing vegetables and

fruits. In addition, land-based production activities entail cash outlays for commercial seeds, fertilizers, plastic sheets, and the like. Moreover, household/village characteristics affect farmers' income. For example, as part of the human capital, educational attainment is commonly viewed as an important household feature (Schultz 1964). And biophysical and socioeconomic variables at the village level, like rainfall and plot size of farmland, are also relevant to income determination. Of course, because the policy measures taken, while providing variable levels of subsidy, the percentage of enrolled area to total land holdings and the number of years a household participated in these programs, have caused substantial land use changes to the sample households, implementing the PFPs have affected farmers' income. Certainly, the direction and magnitude of each program's impact may well vary.

The PFPs effects on sample households' income can be examined in three ways – one based on whether a household participates in a program and the other on how much of its land or how long the household participated in each PFP is enrolled in or occupied by the program. Therefore, the household income (R) can be defined as a function of production inputs ( $X_1, \dots, X_j, \dots, X_J$ ), characteristics of households, natural, and village conditions ( $Z_1, \dots, Z_m, \dots, Z_M$ ), and families' engagements in the PFPs ( $Y_1, \dots, Y_k \dots, Y_K$ ) – areas enrolled in or occupied by the specific PFPs or dummy variables (if yes =1; otherwise 0) or/and participated length indicating the participation status of households. That is,

$$R_{it} = e^{\alpha_0} \prod_{j=1}^J X_{it}^{\alpha_j} \prod_{k=1}^K Y_k^{\beta_k} \prod_{m=1}^M Z_{mt}^{\gamma_m} \varphi_{it} \quad (1)$$

Where i the ith household ( $i = 1, 2 \dots I$ ), t the time period ( $t = 1, 2, \dots, T$ );  $\alpha_j$ ,  $\beta_k$  and  $\gamma_m$  are coefficients to be estimated; and  $\varphi_{it}$  is the error term that is assumed to be independent and identically distributed.

Selection bias which occurs when pre-existing conditions skew outcomes in a way that is not truly attributable to the program intervention bias is a major challenge to measuring program impacts in non-experimental settings (Freeman et al. 2005). In our case, variables that might be endogenous choice of the household (e.g. program participation) may be influenced by production conditions observed by the households but unobserved by the econometrician, and thus may be correlated with the error term in the regression and cause a bias (Pender 2005). First of all, we should take **Hausman test for endogeneity** and self selection test (especially for SLCP and DCBT), if the test results show that there truly exist serious endogeneity and self selection, we will use fixed effects estimation or Instrumental Variables or Two-stage Least Squares (Wooldridge 2002) to tackle the matter. Assuming the unobserved factors are time-invariant (which is likely to hold), one approach to address the endogeneity bias problem is to use fixed effects (FE) estimation. The strength of FE estimation is that it controls for unobserved fixed factors that could confound the estimation. The weakness is that the fixed factors may pick up the effects of variables of interest, eliminating or weakening the ability to identify those effects (Pender 2005). Another common approach is to use instrument variables (IV's) or two-stage Least Squares (2SLS) estimation. The validity of this approach is often limited by the difficulty in finding good IV's. In addition, even if the IV's are relevant and the exclusion restrictions of the model are valid, IV estimation may be inferior to Ordinary Least Square (OLS) if the endogenous explanatory variables of concern are not actually correlated with the error term in the regression (Pender 2005).

The treatment variables at the heart of this study include: 1) a dummy variable for program participation with a value of 1 for participation and zero for non-participation, and 2) an indicator of annual new participation intensity annual new programmed or the total programmed area of each PFPs and 3) the length of participated each program. Correlation between unobserved factors and the two interested explanatory variables is the central

concern throughout the estimations. After performing robust OLS and FE estimations, we try out our model with an IV candidate time of each program introduction at the village or township level, which is not likely to correlate with household unobserved fixed factors while at the same time might be closely related to household program participation.

We also consider using difference-in-difference model to analyze the impact of PFPs on rural households' incomes.

Besides estimating the impact of PFPs on total income of rural households, we divide rural households' income sources into three categories, i.e. land-based income, off-farm income and other incomes (included governmental subsidies). We will use the above methodology to estimate the impacts of PFPs on land-based income, off-farm income and other income of different clusters.

We will also focus on poverty reduction, the impacts of PFPs on income and income sources of different clusters (the poor and the rich), find how and what impacts and impact mechanism (policy matters or non-policy matters, or what policy matters and how policy matters have affected rural households income and poverty reduction) of PFPs on poverty reduction. Policy scenario analysis should be taken to find that what policy matters and how policy matters have affected rural households' income and poverty reduction.

## **6. Data requirements and sources**

We have collected data of 14-year and 3375 rural household samples in 6 provinces, and will update these samples with the proposed financial aid (partial aid, we will use other research funds).

Included in the dataset are the following variables: (1) household demographics (household size, educational achievement of the household head, and the like); (2) monetary outputs

(total income, off-farm income, and income from land-based enterprises) and inputs (labour, farmland, cash expenditure, etc.) for land-based and off-farm activities; (3) the statuses of the PFP participation; and (4) natural and socioeconomic conditions (annual precipitation and average plot sizes of forestland and farmland).

We also use provincial and county statistics data for the proposed research. And other second hand data will be collected for the proposed research. For case study statistics data will be updated to visit local forestry and statistics bureaus and other governmental agencies (such as finance bureau, planning and development committee). For provincial statistics data and information, we will update by use of provincial statistics yearbooks of case study provinces, and visit resource persons, also visit China National Statistics Bureau and PFPs Offices of State Forestry Administration.

## **7. Consultation and Dissemination Strategy**

- 1) We wish one paper will be published in an international journal listed in EconLit.
- 2) We will prepare the working paper in Chinese and English. Working papers will be sent to 6 key audiences: A) local forestry bureaus and other local governmental agencies, and Central Governmental agencies (such as State Forestry Administration, Ministry of Finance, State Planning and Development Committee, State Council Office for Poverty Reduction, Ministry of Agriculture); B) international organizations (such as WWF, World Bank, Asian Development Bank, FAO, UNEP and UNEP, EU) ; C) international and national environmental and poverty NGOs; D) professions of universities, academies and others; E) national media; and F) local rural households and local headmen.
- 3) During the field trips and data collecting process, we will discuss our research goals, activities and outputs with local governmental agencies, rural households and local headmen so that they learn the project.

- 4) Apart from attending EPE workshops, domestic several workshops and seminars will be organized for Consultation and dissemination (such as media, policy decision makers and other stakeholders), during these workshops and seminars, we hold an active and animated dialogues with policy makers and other stakeholders. In the team member will attend domestic or international workshops, such as the Annual Workshop of China Forestry Economics, Annual Workshop of China Agricultural Economics. Also we will attend Forestry Policy Forums or workshops organized by the governmental or academic organizations.
- 5) The research team members will fluently visit policy makers of local governmental agencies and central governmental agencies, informal and formal discusses should be taken between or among these policy makers and the research team members from the research beginning with preparation of my our proposal and carried on throughout our project. In the meantime, we would discuss about our research results with professionals and others by presentations, information exchanges, and paper exchanges. And,
- 6) We will send our policy recommendations and suggestions to State Forestry Administration, Ministry of Finance and other departments of the State Council of China.

### **8. List of team members**

name	Title	Birthday	gender
Can Liu	Policy Division Chief, Dr. Professor	August 19, 1966	male
Hao Liu	Postgraduate student	April 21, 1985	male
Wenqing Zhu	Postgraduate student	February 25, 1987	female
Jinzhi Lv	Research fellow	April 30, 1973	female
Mingzhen Zhu	Postgraduate student	Feb.28 1986	female
Shengnian He	Postgraduate student	July 17, 1986	male

### **9. Expected capacity building**

Professor Can Liu is Policy Division Chief of China National Forestry Economics and Development Research Center as the team leader of the proposed research projects, and he has gained many experiences in international cooperation, publishing peer review papers in international journals and policy designing and preparing for the governmental agencies. Hao Liu (male, team member, age 25), Wenqing Zhu (female, team member, age 23), Mingzhen Zhu (female, team member, age 24) and Shengnian He (male, team member) are master degree postgraduate students, and Jinzhi Lv (female, team member, age 37) are research fellow of China National Forestry Economics and Development Research Center, with the academic supervision of Professor Liu, she has done some interesting researches and published two papers as co-author in international peer review journals and three papers in Chinese journals.

Professor Liu will be responsible for the design and implementation of the project, he is also responsible for the specification of econometric models, and finalizing the papers and policy briefs and policy recommendations. These five junior researchers will be responsible for data collecting, cleaning-up, processing and analyzing, model estimations, literature review and writing the paper drafts and policy brief drafts and policy recommendation drafts.

By implementation the research program, the young researchers and China National Forestry Economics and Development Research center will learn the follows:

- Learn how to prepare peer review paper(s) in international journal(s)
- Master and Update their econometrics analysis techniques and understanding and fluently use STATA for economics and policy analysis;
- Learn the process of international research cooperation and international workshops;
- Learn how to deal with governmental policy decision-makers and the framework of how to prepare for policy briefs and policy recommendation drafts;

- Learn how to use international literatures and identify research questions; and,
- Learn research project designing, data collection and data processing skills and techniques.

**10. Any ethical, social, gender or environmental issues or risks that should be noted.**

Natural disasters will be the risk for our data collection.

**11. List of past, current or pending projects in related areas involving team members**

Dr. Can Liu is a professor of rural economics and division chief of China National Forestry Economics and Development Research Center of State Forestry Administration of China. He has been a team leader and policy specialist on a number of projects in recent years, key ones including:

- Monitoring and assessment of ecological and socioeconomic benefits of the Desertification Combating Program, funded by the SFA (2003-2005);
- Comparative study of institutional arrangements for poverty reduction and community forestry development, funded by the Ford Foundation (2002-2004);
- Socioeconomic and ecological benefit analysis of the Natural Forest Protection Program, funded by the China Council for International Cooperation on Environment and Development (2004);
- Environmental services of forest resources in China, funded by the International Institute for Environment and Development (London) (2003-2005).
- Poverty Reduction in Priority Forestry Program, fund by Asian Development Bank and Ministry of Finance, State Forestry Administration (2004 to the present);
- The key Policy Issues on the Reform of Collective Forestland Tenure fund by World Bank and Ministry of Finance and State Forestry Administration of China (2009 to the present).

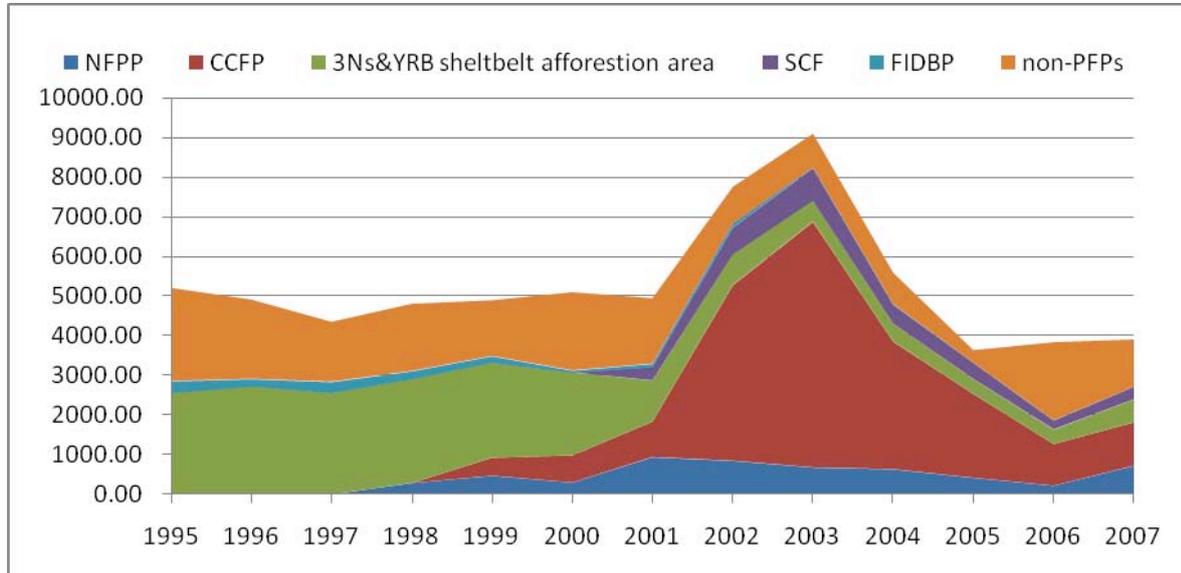
He has published several papers in the peer review international papers and more than 100 papers have been published in Chinese high-quality journals. And policy drafts have been prepared by him to Chinese governmental agencies, for examples, policy drafts for pushing SLCP management and China's Forest Industry Development Planning (2004~2009) and key Policy Options (2004~2006), Natural Forest Protection Program management and Investment Policy (2004, 2010).

## Appendix 1: Key policy measures of the PFPs

Program	Key Policies
Sloping Land Conversion Program (SLCP), covering 25 provinces during 2001-2010	<ul style="list-style-type: none"> <li>• Sloping or desertified cropland is converted into ecological and/or economic forest, and grassland; ecological forest should account for 80% of total converted land.</li> <li>• The central government subsidizes farmers in the form of seeds or seedlings, grain, and cash.</li> <li>• Subsidies last 8 years for ecological forest, 5 years for economic forest, and 2 years for grassland. The annual cash subsidy is 300 Yuan/ha, and the annual grain subsidy is 1500 kg/ha in the Yellow River basin and 2250 kg in the Yangtze River basin.</li> <li>• The central government also makes fiscal transfers to compensate the entailed losses to local fiscal revenues.</li> <li>• Estimated total investment is 225 billion (US\$32.8 billion).</li> </ul>
Natural Forest Protection Program (NFPP), covering 17 provinces during 2000-2010	<ul style="list-style-type: none"> <li>• Complete ban on commercial logging in the upper Yangtze and middle Yellow River basins and sharp reduction in commercial harvests in other program areas.</li> <li>• Shutting down of certain processing facilities, compensating logging firms, and disposing displaced workers and equipment.</li> <li>• Promotion of afforestation and forest management wherever possible.</li> <li>• Strengthening administration and law enforcement, including forest protection.</li> <li>• Restricting the forest industry, and improving the efficiency of timber utilization.</li> <li>• Initial investment commitment is 96.4 billion (US\$14.1 billion).</li> </ul>
Wildlife Conservation & Nature Reserve Development Program (WCNR), scattered all over the country during 2001-2050	<ul style="list-style-type: none"> <li>• Priority protected areas are administrated by the central government, while smaller and less critical areas are managed by the local governments.</li> <li>• Established reserves will reach 1,800 by 2010, 2,000 by 2030, and 2,500 by 2050.</li> <li>• Wetland protection and restoration, ecotourism development, and wildlife breeding</li> <li>• Encouraging domestic and international participation and contributions, including broad involvement of the private sector.</li> <li>• Balancing ecosystem conservation with socioeconomic development.</li> <li>• Strengthening the role of science and technology, particularly nature reserve and biodiversity monitoring and evaluation.</li> <li>• Total planned investment is 135.65 billion Yuan (US\$19.8 billion), with the central government covering 66.44 billion Yuan.</li> </ul>
Shelterbelt Development Program (SBDP), covering all 31 provinces during 2001-2010	<ul style="list-style-type: none"> <li>• Including shelterbelt programs in the Three Norths (northwest, north, and northeast), the Yangtze River basin, the Zhujiang River basin, and the Taihang Mountain Range.</li> <li>• Mobilization of public agencies, civil society, individuals to contribute to the shelterbelt development and tree planting.</li> <li>• Encouraging local government investment and local labour contribution, and adopting new silvicultural techniques.</li> <li>• Total planned investment is 70 billion Yuan (US\$10.2 billion).</li> </ul>
Desertification Combating around Beijing and Tianjing (DCBT), including Inner Mongolia, Hebei, Shanxi, Beijing, and Tianjin during 2001-2010	<ul style="list-style-type: none"> <li>• Convert desertified land into forestland and grassland by means of flexible and diversified measures based on the local conditions.</li> <li>• Changing herding and animal husbandry practices to control overgrazing and rehabilitate degraded grassland.</li> <li>• Developing irrigation projects, and resettling people away from fragile areas.</li> <li>• Extension of suitable production technology and energy sources.</li> <li>• Establishing desertification monitoring and dust storm forecasting systems</li> <li>• Total projected investment is 57.7 billion Yuan (US\$8.4 billion)</li> </ul>
Industrial Timber Plantation Development Program (ITPP), covering 18 provinces during 2001-2015	<ul style="list-style-type: none"> <li>• Market-driven and profit-orientated efforts for increasing domestic timber supply.</li> <li>• As high as 70% of the investment may come from subsidized National Development Bank loans, with 20% from direct government funding and 10% from other sources; in addition, tax incentive is provided.</li> <li>• Encouraging active participation by various enterprises – state or collectively owned, shareholder based, or fully private.</li> <li>• Planned area of establishment is 4.69 million ha by 2005, 9.2 million ha by 2010, and 13.33 million ha by 2015.</li> <li>• Projected total investment is 71.8 billion (US\$10.5 billion)</li> </ul>

## Appendix 2: Afforestation area by FPPs and Non-PFPs

From 1995 to 2007 in China (thousand hectares)



# Curriculum vitas

## CURRICULUM VITAE—CAN LIU

1. **Family name:** Liu
2. **First names:** Can
3. **Date of birth:** August 19, 1966
4. **Nationality:** Chinese
5. **Civil status:** Married
6. **Education:** Ph. D

date	Degree / Diploma obtained (in full, show major)
Sept. 1997-July 2000	PhD. of Management, China Agricultural University, Beijing
Sept. 1989-July 1992	Master of Forestry Economics. Nanjiang Forestry University
Sept. 1985-July 1989	Batcher of Forestry Science. Economics, Nanjing Forestry University
February 2009-April 2009	Visiting professor, School of Forestry, University of Auburn (Forest Economics)
September 2001-March 2002, Feb.-March, 2010	Senior visiting scientist, Michigan State University (Forest Economics)
October 2000-July 2003	Post-doc, agricultural economics, Chinese Academy of Agricultural Sciences
March 1998-July 1998	Environmental and Resource Economics in University of Philippines
July 1997-November 1997	The Certificate course in community forestry in Kasetsart University, Thailand

7. **Language skills:** Indicate competence from 1 (excellent) to 5 (basic)

Language	Reading	Speaking	Writing
Chinese	1	1	1
English	1	1	2

8. Professional experience:

Date from – Date to	Location	Company	Position	Description (provide detailed description of objectives, activities and outputs; do not include assignments consisting only of conferences or workshops)
July 2009-December 2010	<b>China</b>	The World Bank, and Ministry of Finance	The team leader	<p>The Policy Issues on the Reform of Collective Forestland Tenure in China</p> <ol style="list-style-type: none"> <li>1) The Definition of the property rights of these rented forestlands and planned environmental forestlands.</li> <li>2) How to reconstruct small size forestland management to a larger scale and how can joint forestland management gain an economy of scale.</li> <li>3) Sound transfer of forestlands and trees is required. And</li> <li>4) How to encourage farmers to sustainably manage their allocated forestlands is required.</li> </ol> <p>By studying the above four critical issues, we will provide policy recommendations for the central and local governmental agencies to push the reform of the collective forestland tenure system.</p>
Jan. 2008-March 2009	<b>China</b>	Ministry of Finance and State Forestry Administration	The team leader	<p>Team leader and policy and institution experts: Six Priority Forestry Programs and Farmers' Incomes</p> <ol style="list-style-type: none"> <li>(i) Supervise and coordinate the work of the team of consultants, providing each team member elaborated terms of reference and specific guidance and liaise with Ministry of Finance and State Forestry Administration</li> <li>(ii) Using econometric methods to analyze the linkages between six Priority Forestry Programs and Farmers' Incomes</li> <li>(iii) Prepare the policy and institution reports</li> </ol> <p>Edit the final report and policy recommendation reports</p>

August 2005- January 2007	<b>China</b>	Asian Development Bank (TA- 4357 PRC)	Poverty and sociology/env ironmental economics expert	(i) identifying, and reviewing, existing national and provincial level poverty datasets of relevance to IEM and land degradation control; (ii) assisting each provincial IEM Information Centre to obtain, or access electronically, the poverty related data sets they need, initial priority going to those needed by the provincial strategy and action plan task forces (component 2.3); (iii) assisting each provincial IEM Information Centre to obtain both hard copy (census and other statistical reports, demographic maps etc) and electronic files from the relevant agencies involved in the collection of provincial, county, township and village level poverty data for their province/ autonomous region; (iv) reviewing the socio-economic indicator sets of the global LADA program and advising on, and assisting with, the development of a western PRC specific set of tools and appropriate indicator sets that can be used, in the local level participatory land degradation monitoring and assessment pilot studies, to monitor and assess the economic impact of land degradation and its control at the local/community level, with specific reference to the links with poverty and social deprivation; and (v) providing direct advice and hands-on-training, to those involved in the pilot studies, on how to use the set of tools and indicator sets to monitor and assess the economic impact of land degradation and its control at the local/community level, with specific reference to the links with poverty and social deprivation.
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November 2004-January 2006	<b>China</b>	Asian Development Bank (TA- 4307 PRC)	The team leader	<p><b>1)</b> Supervise and coordinate the work of the team of consultants, providing each team member elaborated terms of reference and specific guidance and liaise with EA and the ADB on matters related the implementation of the TA; <b>(2)</b> Prepare during inception a work plan for the study, finalize a draft outline of the Final Report, based on the draft in Appendix 4, complete with list of proposed appendices and work plans for individual assignments, as required; explain the purpose, proposed activities and work plan of the TA at an Inception Seminar which will be attended by all relevant government ministries, agencies and other stakeholders; <b>(3)</b> Design case studies and surveys to assess the economic and social impacts(including effect on household incomes ), cost(cost of compensation, implementation, and loss of revenue), and distribution impact of the benefits and costs of the programs. The case studies will help identify policies, programs and successful models that are sustainable and effectively reduce poverty; <b>(4)</b> Provide an input to the consultants team on the budget requirements, logistics and organization of field studies, data collection, case studies, seminars, and workshops; advise on the organization of, and provide an input into workshops; <b>(5)</b> Participate as the key resources person in the final seminars for the presentation of the findings of the TA study to a gathering of officials from different levels of government throughout the PRC; <b>(6)</b> Assume responsibility for the timely preparation of all reports and other materials; and ensure widespread dissemination of the findings and recommendations of the Study. <b>(7)</b> Provide a brief overview of the Government’s overall policy framework on environmental and ecological degradation and the policy framework for rural reduction, and identify the linkages and interactions of the PFFs policy framework to the overall policy framework for environment and rural poverty reduction; <b>(8)</b> Prioritize the implementation of the proposed policy changes taking into account their short-,medium-, and long-term social and environmental impacts, the legal and institutional changes required, and the budgets, staffing and institutional capacity required to implement the proposed recommendations.</p>
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February 2004--May 2005	<b>China/Japan</b>	International Union For Forestry Researcher Organization (IUFRO)	Coordinating convening lead author (other authors are from other Asian countries).	Asian Regional Report, the report will update forestry development in Asian countries, forest resources and management models, forest industry development, and forestry institutional arrangements and changes, forest product international trade and relevant issues. Responsible for preparing outline work programs and coordination of inputs by the team members who come from Japan. Iran, Korea, Malaysia, CIFOR and other countries. And also responsible for reviewing and analysing the status of Asian forestry development, and Presenting policy recommendations to IUFRO, FAO, ITTO and the Governments of some Asian countries. The paper was presented in the next IUFRO Conference that will be held in 2005 in Austria.
March 2004-May 2004	<b>China</b>	German Technical Cooperation (GTZ)	Consultant and policy Specialist	“Forestry training survey and assessment of the forestry training course, which was financed by GTZ” Responsible for preparing outline work programs and visited each network forestry schools and prepared policy recommendations; evaluated preferences of each network forestry schools; submitted the independent report to GTZ.
December 2003-May, 2005	<b>China</b>	State Forestry Administration	Team Leader/Policy Specialist	“Forestry industry development and planning in China” Responsible for preparing outline work programs and coordination of inputs by the team members. Prepared the report to State Forestry Administration. In accordance with the report and policy recommendation, State Forestry Administration will prepare forestry industry development and planning in China for implementation in China.
March 2000-March 2003	<b>China</b>	Ford Foundation	Team leader	“Comparative study of institutional arrangement for poverty reduction and community forestry development” Responsible for assessing the institutional arrangement of community forestry and poverty reduction in China and four case study areas; prepared policy recommendation and research paper. The expected result is the report of “Comparative study of institutional arrangement for poverty reduction and community forestry development”

February 1997-February 2000	<b>China</b>	Ford Foundation	Team leader	The institutional arrangement and case study of community forestry and community forestry development. Prepared outline, led the team of the field trips and household surveys, and prepared the research report and policy recommendations. 240 rural households had been selected as samplings to analyse the linkage between poverty reduction and forestry institutional arrangements and changes, the papers have been published in <i>Journal of Forestry policy and Economics</i> , and presented at several international conferences, and State Forestry Administration of China has accepted some policy recommendations.
September 2000-September 2001	<b>China</b>	International Institution for Environment and Development (London)	<b>Team leader</b>	“Environmental services of forest resources in China (IIED)” Team leader/ policy specialist: the research analysed the constraints and opportunities of establishing markets for forest environmental services in China, it is the first time that China side took the study. Responsible for preparing outline and led the team for field trip, prepared research report and policy suggestions. The paper has been published by DFID and accepted by XXII World Forestry Congress
March 2003-March 2006	<b>China</b>	State Forestry Administration	Team leader	Monitoring and assessment of socio-economic and ecological benefits of Sandification Control Program for Areas in the Vicinity of Beijing and Tianjin Responsible for preparing indicators and sampling selection, 30 counties have been selected as samplings. Annual and final reports and policy recommendations are to be prepared.
March 2000-December 2000	<b>China</b>	China Council for International Cooperation on Environment and Development	Team leader	“Socio-economic and ecological benefit analysis of Natural Forest Protection Program.” Responsible for coordinating and conducting socio-economic and ecological analyses on Natural Forest Protection Program, and analysing the impacts of the program on farmers and other different stakeholders, preparing for policy suggestions.

May 2001- August 2004	<b>China</b>	International Tropical Timber Organization (ITTO)	Team leader	Carbon sequestration and oxygen release accounting of forest resources. Responsible for preparing outline and coordination of the research project, designing the methodology and the case study scenario, and preparing the research paper and specific computer software. The case studies have been done in Shandong Province and Hainan province, the papers have been presented at the international conferences, the methodology has been adopted by ITTO, and ITTO hopes that producer countries of ITTO in Asia, Africa and Latin America will use the accounting methodology.
March 1996- March 2000	<b>China</b>	The World Bank	Team leader	the case study of ecological farm—north case study in China Responsible for preparing outline and methodology, conducting and coordinating the research team's field trip and household survey. Analysing the linkages forestry policies' effect on ecological farm development and poverty reduction in the north case study (Miyun County, Beijing), and recommending institutional changes.
September 1999-March 2001	<b>China</b>	FAO	Co-team Leader/Policy Specialist	“Forestry joint stock partnership management and policy issues” Responsible for preparing research outline and collecting data for the research project; analysing these constraints and advantages of forestry joint stock partnership management, and existing issues of policy issues; preparing the research report and policy scenarios.
October 2000- September 2003	<b>China</b>	Ministry of Agriculture	Team leader	“Study on environmental economics and policy analysis on forest resource and pasture management in China” Responsible for preparing research outlines and methodology, and collecting data for the case study and processing data, preparing for research paper and policy implications.
March 2001- March 2002	<b>China</b>	State Forestry Administration	Team leader	“Study on forestry supportive policy system in China” Responsible for analysing the existing issues of forestry supportive policy system in China, and preparing policy scenarios for State Forestry Administration.
December 1998-July 1999	<b>China</b>	Food and Agriculture Organization (FAO)	Project Facilitator	“Transition from the Planned Economy to Market orientation economy in Asian Countries (China, Myanmar, Viet Nam and Mongolia, FAO 158 regional project)” Responsible for coordinating the project activities of member countries, and academically supporting member countries' research activities, closely linking with FAO Asian and Pacific Regional Office; and preparing the outlines for the member countries' policy analyses and research activities; organizing training workshops and symposiums, discussed with the governments of member countries and other stakeholders.

May 2004- June 2004	<b>China</b>	The State Planning and Reform Commission of China	Policy specialist	“the Mid-term Evaluation of Natural Forest Protection Program in China ” Responsible for evaluating Natural Forest Protection Project progress, and finding existing problems, preparing for policy recommendation.
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## 9. Publications (English)

- 1) **Can LIU**, Jinzhi Lv and Runsheng Yin, An Estimation of the Effects of China's Forestry Programs on Farmers' Income, **Environmental Management** , 2010(3)
- 2) **Liu Can**, Chen Hua, Lv Jinzhi, Li, Nannan, Xing Xiangjuan, An Empirical Estimation of Effects of Priority Forestry Programs on Farmers' Incomes in China, **Chinese Forestry Science and Technology** Vol.7 No.1, 2008
- 3) Sen Wang, **Can LIU** and Bill Wilson. Is China in a Later Stage of a U-Shaped Forest Resource Curve? A Re-examination of Empirical Evidence , **Forest Policy and Economics**, 2007 ( 5)
- 4) **Can LIU**, Sen Wang, Wei Zhang, Dan Liang, Compensation for Forest Ecological Services in China, **Forestry Science in China**, 2007 ( 1) .
- 5) **Can LIU**. Total Factor Productivity Change and Poverty Reduction in China: Experiences from Three Counties. Proceeding of the Eleventh Workshop on Community Based Management of Forestlands: 'Equity in CBNRM', 2005. ( **Hanging in the Balance Equity in Community-Based Natural Resource Management in Asia**: Edited by Sango Mathanty, Jefferson Fox, Michael Nurse, Peter Stephen and Leslie McLees, 2006, RECOFT and East-West Center )
- 6) Xu, Jintao, Runsheng Yin, Zhou Li and **Can LIU** 2005, "China's ecological rehabilitation: unprecedented efforts, dramatic impacts, and requisite policies". **Ecological Economics**, 57 (2006) 595-607.
- 7) Zhang Wei, **Can LIU**. Impact of Environmental Programs on Rural Household Income: The Case of Sandstorm Source Control Program in North China, **AAEA ( America )** , 2005
- 8) **Can LIU**, Maxim LOBOVIKOV, Hiroyasu OKA, Yeo-Chang YOUN, Daniel Murdiyarsa, Asian Forestry in paradigm shifts, **United Nations University Press**, 2005
- 9) Ren Hongchang, Lu Yonglong, **Liu Can**, Xue Tongliang, the Study on Eco-contribution of Agroforestry in the Plain Area Agricultural Development in China ---Huai'an Prefecture, Jiangsu Province as the Case Study Area, **Journal of Environmental Sciences**, Vol.17(3), 2005 (SCI)
- 10) **Can LIU**, YIN Runsheng. Poverty Dynamics as Revealed in the Production Performance of Rural Households: the Case of West Anhui, China. **Forest Policy and Economics**.2004(6)
- 11) Runsheng Yin. Jintao Xu. Zhou Li. **Can Liu**. China's Recent Forestry Initiatives: Unprecedented Efforts in Uncharted Territory. **China Environmental Series** 2005 (7)
- 12) **LIU Can**. Measuring and Analyzing the Production Performance of Rural Households in Jinzhai County of Anhui Province. **Forestry Science in China**. 2004(3)
- 13) **LIU Can**. Marketing Practice of Forest Environmental Services in China. **Chinese Forestry Science and Technology** Vol.2 No.4, 2003
- 14) **Liu Can**. the Accounting for Carbon Sequence and Oxygen Release of Forest Resources and the Case Study. **Chinese Forestry Science and Technology** Vol.2 No.2, 2003
- 15) **Liu Can**. Jinzhai County Household Technical Change and Efficiency Change Analysis: Stochastic Frontier Production Function Approach. **Chinese Forestry Science and**

- 16) Kong Mingle **Can.**2000. Research on institutional arrangement issues affecting the development of forestry joint stock partnership in China, FAO

**CURRICULUM VITAE—HAO LIU**

1.	MAJOR	Forestry economics and policy
2.	NAME	LIU, Hao (Mr.)
3.	DATE OF BIRTH	April 21, 1985
4.	NATIONALITY	The People's Republic of China
5.	PERSONAL ADDRESS	Research fellow China National Forestry Economics and Development Research Center No. 18 East Street, Hepingli, Beijing, 100714, CHINA Tel: +86 10 84239490 Fax: +86 10 64279246 MP: +86 13811718428 Email: 6hao1121@163.com
6.	EDUCATION	July 2008 to the present: Postgraduate student, China National Forestry Economics and Development Research Center Sept. 2004 to July 2008: Bachelor Degree of Mathematics, Beijing Institution of Technology Sept. 2004 to July 2008: Double Bachelor Degree of Administration Management, Beijing Institution of Technology
7.	LANGUAGE AND DEGREE OF PROFICIENCY	English (fluent) Chinese(mother tongue)

**8. KEY RECENT RESEARCH ASSIGNMENTS**

Date	Research program	Sponsors
July 2008~ Dec.2009	Six Priority Forestry Programs and Farmers' Incomes	Ministry of Finance and State Forestry Administration of China
July 2009~ Dec.2010	The Key Policy Issues on the Reform of Collective Forestland Tenure in China	The World Bank and Ministry of Finance of China

**9. PAPERS**

1. Hao Liu, The impact of Monopoly on social welfare –based on Price uncertainty approach, *Forestry Economics* 2010(2) (forthcoming)

**10. CONFERENCE**

1. Spt.2009: The Second Conference of International Forum for Contemporary Chinese Studies (IFCCS), University of Nottingham  
2. Aug.2009: The Conference of Project Management of the China Economic Reform Implementation Project (TCC5), Taiyuan

**CURRICULUM VITAE—WENQING ZHU**

1.	Major	Forestry economics and policy
2.	NAME	ZHU, Wenqing (Ms.)
3.	DATE OF BIRTH	Feb.25, 1987
4.	NATIONALITY	The People's Republic of China
5.	PERSONAL ADDRESS	Research Assistant China National Forestry Economics and Development Research Center No. 18 East Street, Hepingli, Beijing, 100714, CHINA Tel: +86 10 84239490 Fax: +86 10 64279246 MP: +86 15901562165 Email: <a href="mailto:zhuwenqing2009@gmail.com">zhuwenqing2009@gmail.com</a>
6.	EDUCATION	July 2009 to the present: Postgraduate student of Master Degree of Forestry Economics Theory and Policy. Chinese Academy of Forestry Sept. 2005~July 2009: Bachelor Degree of International Economics and Trade, Qingdao University
7.	LANGUAGE AND DEGREE OF PROFICIENCY	English (Fluent) Chinese (mother tongue)

**8. KEY RECENT RESEARCH ASSIGNMENTS**

Date	Research program	sponsors
July. 2009~ Dec.2009	Six Priority Forestry Programs and Farmers' Incomes	Ministry of Finance and State Forestry Administration of China
July 2009 – Dec. 2010	The Key Policy Issues on the Reform of Collective Forestland Tenure in China	The World Bank and Ministry of Finance of China

**9. PAPERS**

1. Wenqing Zhu., The Conservation Reserve Program and its effects and Experiences shared by China, *Forestry Economics* 2009 (12) and 2010 (1) (forthcoming)
2. Wenqing Zhu and Can Liu, The effect of Priority Forestry Programs on Rural Households' Income Inequality in China, *Forestry Economics* (Forthcoming)

**CURRICULUM VITAE—JINZHI LV**

1.	Major	Forestry Economics and Policy
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2.	NAME	LU, Jinzhi
3.	DATE OF BIRTH	April 30, 1973
4.	NATIONALITY	The People's Republic of China
5.	PERSONAL ADDRESS	Associate Professor China National Forestry Economics and Development Research Center No. 18 East Street, Hepingli, Beijing, 100714, CHINA Tel: +86 10 84239490 Fax: +86 10 64279246 MP: +86-13146531709 Email: lv_jinzhi@yahoo.com.cn
6.	EDUCATION	2005: Master Degree of Forestry Economics. Northeast Forestry University 1994: Bachelor Degree of Academic of Computer Application. Harbin Investment College
7.	OTHER TRAINING	2000-2003: Training in Account and Finance Theory, Harbin University of Commerce.
8.	LANGUAGE AND DEGREE OF PROFICIENCY	English (Fluent) Chinese (mother tongue)

## 11. KEY RECENT RESEARCH ASSIGNMENTS

Date	Research Program	Sponsors
Jan. 2009~ Dec.2009	Six Priority Forestry Programs and Farmers' Incomes	Ministry of Finance and State Forestry Administration
Jan. 2008~ Dec.2008	Six Priority Forestry Programs and Farmers' Incomes	Ministry of Finance and State Forestry Administration
Nov. 2004~ Jan 2006	Asian Development Bank (TA-4307 PRC)	ADB and Ministry of Finance
May 2004~ May 2005	Forestry industry development and planning in China	State Forestry Administration

## 12. PAPERS

1. Can Liu, **Jinzhi LU** and Runsheng Yin, An Estimation of the Effects of China's Forestry Programs on Farmers' Incomes, *Environmental Management*, 2009(FORTHCOMING)
2. LIU Can, HEN Hua, **LU Jinzhi**, LI Nannan and XING Xiangjuan, An Empirical Estimation of Effects of Priority Forestry Programs on Farmers' Incomes in China, *Chinese Forestry Science and Technology*, Vol.7 No.1 2008
3. LIU Can, **LU Jinzhi**, YANG Yannan, WANG Liquan and LIU Weiping, Study on New Progress of China's Collective Forest Tenure Change, *Forestry Economics*, 2008(5)
4. **LV Jinzhi**, Economics Analysis of Priority Forestry Programs' Subsidy, *Forestry Economics*, 2007(12)
5. LIU Can, **LU Jinzhi**, The Study on Collective Forestland Tenure in China, *Research of Institutional Economics*, Vol.15 2007

6. LIU Can, **LU Jinzhi** ,WANG Liquan and LIN Haiyan, The Study on Collective Forestland Tenure Issues in China-Institutional Arrangements, Changes and Performances, *Forestry Economics*,2006(11,12),2007(1,2)
7. LIU Can, LIANG Dan,**LU Jinzhi** ,XU Zhaojin and ZHAO Yunchao, Estimate and Analysis of Six Priority Forestry Programs Influence to Farmers' Income, *Forestry Economics*,2006(10)
8. **LU Jinzhi** ,LIN Haiyan,Paradigm Shift in Asian Forestry (Translation), *Green China*, 2005(9,10,11)
9. LIU Can, MENG Qinghua,LI Yuming and **LU Jinzhi** ,A Case Study on Ecological and Socioeconomic Benefit Evaluation of Sichuan Provincial Natural Forest Protective Project, *Acta Ecologica Sinica*, 2005(3)
10. **LU Jinzhi** ,WAN Zhifang,Thinking about NFPP in Welfare Economics, *Green China*, 2004(10)
11. **LU Jinzhi** ,How to Narrow the Gap between Eastern and Western Region in China, *Economic Technology Cooperation Information*, 2004(5)
12. LIU Can, **LU Jinzhi** ,The Study of Ecological Compensation for Forest Resources, *Green China*, 2004(4)

#### RESUME—Mingzhen Zhu

<b>1. Major</b>	Forestry Economics and Policy
<b>2. Name</b>	Mingzhen Zhu(Ms.)
<b>3. Date of Birth</b>	Feb.28 1986
<b>4. Nationality</b>	The People's Republic of China
<b>5. Personal Address</b>	China National Forestry Economics and Development Research Center No. 18 East Street, Hepingli, Beijing, 100714, China Tel: +86 10 64279246 Fax: +86 10 64279246 MP: +86 13581920261 E-mail: <a href="mailto:zhumingzhen0129@163.com">zhumingzhen0129@163.com</a>
<b>6. Education</b>	July 2008 to the Present: Postgraduate student: Chinese Academy of Forestry Sept.2004~June 2008: Bachelor Degree of Information Management and Information System Tianjin University of Science & Technology
<b>7. Language and Degree of Proficiency</b>	English(Fluent) Chinese(Mother Tongue)

#### 8. Key Recent Research Assignment

Date	Research Program	Sponsor
July 2008~ Dec. 2009	Six Priority Forest Programs and Farmers' Incomes	Ministry of Finance and State Forestry Administration of China

#### 9. Papers

1) Mingzhen Zhu, Li Wang and etc., State Forest Management Research in South Africa

**CURRICULUM VITAE—Shengnian He**

1.	MAJOR	Forestry Economics and Policy
2.	NAME	Shengnian He (Mr.)
3.	DATE OF BIRTH	July 17, 1986
4.	NATIONALITY	The People's Republic of China
5.	PERSONAL ADDRESS	China State Forestry Administration Economics and Development Research Center No. 18 East Street, Hepingli, Beijing, 100714, CHINA Tel: +86 10 84239490 Fax: +86 10 64279246 MP: +86 15901173023 E-mail: hsn717@163.com
6.	EDUCATION	June 2009 to the present: Postgraduate student Sept. 2005 to June 2009: Bachelor Degree of Economics, Xiangtan University, China
7.	LANGUGE AND DEGREE OF PROFICIENCY	English (Fluent) Chinese(Mother Tongue)

**8. KEY RECENT RESEARCH ASSIGNMENTS**

Date	Research program	Sponsors
July 2009~ Dec.2010	The Key Policy Issues on the Reform of Collective Forestland Tenure in China	The World Bank and Ministry of Finance of China