Annual Report of the Environmental Economics Working Group

2000

Part 1 Background

The programme year 2000 of the Environmental Economics Working Group (EEWG) was spanning from August 1999 to August 2000. Based on the work and experience gained in the programme year 1999, studies conducted by the EEWG in 2000 were focusing on the following planned topics:

- Modeling and policy analysis of environmental tax and fee in China
- Environmental damage valuation in China
- Preliminary analysis of Environment and Poverty Alleviation
- Integrating environment/resources into national economic accounting system
- Sustainable development of grasslands
- Green accounting of enterprises
- Integrating environment into education of business administration

With proceedings upon the above topics, the fourth session of the EEWG was held in Xining, Qinghai province, in July 2000. Here below outlines the progress and plans on the major projects of the EEWG, namely, Reform of Environmental Taxation, Environmental Damage Valuation, and Environment and Poverty Alleviation in China.

Part 2 Reform and Policy Analysis of Environmental Taxation in China

The EEWG focused on Green Taxation Reform in China in its research in 1999, aiming to identify opportunities and assess the potential for development of environmental taxation in China. As a result, the objectives and guidelines of environmental taxation reform were set up. Meanwhile, some main measures to this end were proposed, namely, environmental taxes related with energy product and vehicle using, water pollution levies, environmental taxes on agricultural input and other products, investment tax incentives; and methods to implement the reform of environmental taxation were also put forward. Among the above, primary policy recommendations include designing SO2 tax on coal, and increasing the rates of environment-oriented tax on petroleum and diesel oil while decreasing or abolishing the consumption tax of family cars.

The research work of the EEWG was continuing to build upon the previous studies, and research programme for the next phase was proposed.

2.1 Research progress

2.1.1 Modeling of SO2 tax

The objective of this study is to analyze the influence of SO2 tax on the economy in China, especially the energy industry. Studies on the pollution status of SO2 and the
existing controlling methods suggested that SO2 tax could be a suitable and efficient way to control SO2 pollution in China at present and in the future.

Specific work done in last year was to establish the framework of a Computable General Equilibrium (CGE) model for China in efforts to analyze the economic impacts of alternative rates of SO2 tax.

2.1.2 Development of environmental tax scenarios

Studies on this aspect included identifying proposed and potential environmental taxes, and setting alternative levels of tax rate and adjustment plans for each kind of tax.

2.2 Work plan for next phase

- The main work of next phase will concentrate on various simulations using the calibrated Computable General Equilibrium Model for China, to predict the environmental and economic effects of different environmental taxes such as petroleum and diesel oil taxes, SO2 tax, carbon tax, and other pollution taxes.
- Re-simulations and policy recommendations will be built upon previous studies. To do so will include the adjustment of policy scenarios, the re-simulation of each tax measure, and formation of the final policy reform recommendations.
- The phase will also include preparation of a major publication on the prospects for a comprehensive green taxation programme in China. The key findings and recommendations of the damage valuation and environment and poverty alleviation studies will be included, since an appropriate taxation policy will require assessment of the damage caused by environmentally degrading behaviours as well as the incidence of costs and benefits of conservation measures.

Part 3 Environmental Damage Valuation in China

This study has been aiming to provide the Chinese government with more precise, more practically reliable, and more theoretically sound valuation of environmental damage in China, and to support the environmental investment planning and environmental policy planning at the macro level as well. To serve this end, a rational and general framework for evaluating the economic costs of environmental damage was constructed in efforts to estimate the cost of environmental damage during 1990s.

3.1 Research progress

- Current efforts are mainly concerning with the damage of air pollution and water pollution. Therefore, representative dose/impact relationship of physical damage were established, while benefit transfer and contingent valuation methods were employed to assess the possible magnitudes of damage, which could be considered at low, middle and high levels.
- Methodology for establishing the framework of environmental damage valuation was studied drawn upon critical assessment and comparison of the existing valuation studies.
• Benefit transfer was employed as the main method to establish valuation framework, into which some of the existing references on pollution toxicology, dose-respond relationship and monetarization technology were integrated.

3.2 Proposed work plan for next phase
The next phase of the work, for which additional funding is sought, will be planned for surveys of environmental damage in representative urban and rural sites in China. Moreover, a major publication on estimation of environmental damage in China and policy applications will be prepared. Specific works will include the followings:
• Further research will be concentrating on validation, aggregation of values, and comparison with earlier estimates in China and estimates obtained from comparable countries. This work will be done based on the existing studies and surveys.
• Forecasting the environmental damage trend and policy planning. Environmental damage trend will be estimated under some certain conditions, such as changes of population growth rate, economic growth and restructuring, energy consumption, urbanization and environmental policies.

4. Environment and Poverty Alleviation
Linkages between environment and poverty alleviation are complex. In some circumstances poverty is a cause of environmental degradation; in others, rapid industrialization and income-generating activities are major causes. Market and policy failures exacerbate the problems suffered by the poor, who tend to suffer most in physical terms from environmental degradation. The findings of this study would also add a new dimension to both the valuation and the green taxation studies.

4.1 Preliminary investigation
• The existing studies on the poverty environmental degradation nexus at home and abroad were briefly reviewed, and the framework for cause-effect analysis was worked out.
• Preliminary field surveys were conducted in some poor regions and rural areas, mainly located in the central and west China.

4.2 Initiative policy recommendations
• It’s necessary to integrated poverty alleviation and income distribution objectives into economic tools that the government has in addressing environmental issues. The distributional impacts of environmental taxation, pricing, or regulatory measures, as well as environmental investment decisions should be estimated and incorporated with such policies.
• Sound environmental policies should be developed in light of the incidence of the costs and benefits of the damage and of the remedial measures, in order that an efficient and equitable solution can be reached.
• In practice, however, this is not usually done, not only because of a genuine difficulty in assessing costs and benefits of environmental actions, of their incidence, but also because there may be opposition to the search for such solutions by parties benefiting from the status quo, i.e., from the “externalities” that they may cause. Therefore, identification of the impact of certain categories of environmental
degradation by income group, and the distributional incidence of the costs of alternative environmental policy measures among socio-economic groups is essential. This should be a necessary step in identifying policies that are at once both efficient and equitable.

4.3 Proposed studies for the next phase

• Initially an assessment would be based upon studies and statistical material readily available in China, using sources such as environmental assessments, natural resources and pollution surveys, and project reports, and combining them with income distribution, household, or other socio-economic data. Both city or county level data as well as inter-regional data would be reviewed. An effort would thus be made to overlay environmental and socio-economic data on a geographic basis.

• This initial assessment would identify areas in which field study would be most feasible and useful, where a) the incidence of damage caused by environmental degradation and b) the potential impact of alternative policy measures on different income groups could be illustrated. The analysis could begin with a partial equilibrium approach.

• Illustrative case studies would be chosen to demonstrate the potential magnitude and direction of the above impacts, and to set the priorities of such analyses of environmental and poverty alleviation policy in China.

5. Other Studies and Working Plan

• Green accounting of national income. This is the continuing of the work done during last phase. Attention will be given to the development of necessary components, which would contribute to the practicability of the policy. As was noticed by the EEWG, the reform in this field would be a long-term objective.

• Green accounting of enterprise. The main concern was case study on the clean production auditing and environmental achievement of enterprises, in which the benefits were identified as the followings: conceptual shifting from traditional pollution treatment to clean production, and effective pollutants mitigation while cutting down the cost of production. Issues need further study are a) means of development and its implication of environmental cost system, b) coordinating mechanism for financing management and production management, and c) cost-benefit conception for budgeting and feasibility analysis.

• Sustainable development of grasslands. Surveys were done on the system of charged contraction of grasslands in typical agricultural and pasturing area. It’s concluded that the charged contraction system of grasslands has contributed to improved conservation activities of natural grassland, grassland enclosure, controlling of desertification, and improvement of ecological condition of some certain areas. however, the degradation of grassland and declining of production force is still remaining unsolved because of the inadequate investment and unclear right and responsibility. The deep-rooted reasons may be ineffective management, overusing of natural grassland and unclear property right of grassland. Accordingly, policy recommendations were brought forward as: a) to suspend using of seriously degraded grassland, b) replacing free grazing with rotational grazing by zone, and c) improving management of grassland.
integrating environmental issues into business education. Environmental protection, rational exploitation and conservation of natural resources run through the overall procedures of manufacturing and even the whole life cycle of the products. Issues like the strategic planning, design of technical procedure, selecting of equipment and raw materials, marketing tactics, and human resources management, are all related to environmental protection to some certain degrees. As the future managers, MBA, therefore, are supposed to improve their environmental awareness and the elementary abilities of environmental management, so as to pursue the win-win between business management and environmental protection. Policy recommendation thus proposed are that a) it is necessary to improve environmental awareness of business managers and to integrate environmental protection into their daily business management; b) environmental awareness of business manager can be improved through selective curriculum on environmental management or relevant sections supplemented into the existing MBA courses. Accordingly, an environmental management course was designed with clear curriculum schedule so far.

Support to other working groups. Support to other working groups include attending other group’s meetings, being involved into specific studies, and reviewing the research report of other working groups. It is proposed to spend a few days each year to help the working groups on transport and integration of environment in economic planning.

High level seminars. Seminar basically revolving around pricing and taxation issues was hoped to conduct. One-day seminars could be introduced into the periodic residential courses for senior officials. It is hoped to conduct two seminars each year, primarily aimed at raising the awareness of participants from ministries and other non-environmental government agencies about the actual and potential linkages between their economic and financial policies and the environment. Preliminary discussions have been held with the World Bank Institute regarding possible joint sponsorship of one such seminar, which would be directed primarily at municipal mayors.