



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



PANEL REPORT: RURAL INFRASTRUCTURE: INVESTMENT,  
DELIVERY AND FINANCE

**ORGANIZER, CHAIRPERSON AND RAPPORTEUR**

*Peter Hazell (International Food Policy Research Institute, Washington, DC, USA)*

**PANEL DISCUSSANTS**

*Shenggen Fan (International Food Policy Research Institute, Washington, DC, USA), Walter Huppert (Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Germany), Ashok Gulati (Institute of Economic Growth, University of Delhi, India)*

Peter Hazell introduced the topic, pointing out the critical importance of public investments in rural areas for achieving agricultural and rural economic growth and poverty reduction. He said that levels of public investment had stagnated or fallen in many developing countries, partly in response to financial retrenchments associated with macroeconomic policy reforms, but also because agricultural development has become a low priority for most donors and multi-lateral lending agencies. Countries will have to learn to do 'more with less' with their rural investments. Hazell identified three key issues for the panel discussion: (a) how to set priorities more efficiently for public investments to achieve growth and poverty reduction goals; (b) how to get better and more efficient service out of the institutions that provide public goods and services; and (c) how to pay for public goods and services on a financially sustainable basis. He was pleased to be able to introduce three distinguished panellists who would address each of these issues.

Shenggen Fan (IFPRI) gave a summary of some of his recent work on estimating the returns to public investments in rural India and China. On the basis of econometric analysis of time-series data available by subregions, he had been able to calculate and rank the additional amount of agricultural output and the number of poor people raised above the poverty line for additional units of expenditure on different types of public investment. He reported that, in India, additional government expenditure on rural roads has the largest impact on rural poverty reduction, as well as the second-largest impact on agricultural productivity growth. Investments in agricultural R&D have the second-largest impact on poverty reduction, but contribute the most to agricul-



tural productivity growth. Education investments also score well for growth and poverty reduction, while the marginal returns to further rural electrification and irrigation are now quite low. Investments in soil and water conservation and rural development have useful poverty impacts but contribute virtually nothing to agricultural productivity growth.

In China, education investments have the largest impact on rural poverty reduction and the second-largest impact on agricultural productivity growth. As in India, agricultural R&D ranks the highest in terms of its growth impact, but ranks third for poverty impact. Additional investments in roads, electrification and rural telephones also give favourable returns in terms of agricultural growth and poverty reduction. As with India, additional expenditures on irrigation now contribute relatively little to growth or poverty reduction.

Fan also reported that a disaggregated analysis by different types of agricultural regions in India showed that the marginal returns to public investments are now higher in many rainfed zones than in the irrigated areas. Moreover, investments in some of the lower-potential areas are also becoming more attractive on the margin. He is also obtaining similar results in China. Fan's work is indicative of the kinds of policy research that can usefully guide policy makers in setting investment priorities to achieve growth and poverty alleviation goals more efficiently.

Walter Huppert (GTZ) discussed the importance of transparency and accountability in the provision of infrastructure services. Provision takes place in the context of a network of involved actors – different organizations, groups and individuals – and the nature and context of their interactions are crucial in determining whether the users' needs are met, and how efficiently and sustainably the service is provided. Understanding the mechanisms and incentive structures that condition these multi-actor relationships is crucial for improving service provision. Externally set and enforced laws and regulations are often an important conditioning factor, but so are the basic norms, values and understandings between actors, access to key information and the negotiating power of different groups. Good service provision requires accountability to the clients.

The new institutional economics draws attention to particular circumstances that tend to jeopardize accountability at different linkage points in the systems and create perverse incentives. The presentation and discussion focused on the presence of such 'principal-agent' phenomena in the context of water delivery services by large irrigation agencies. With case examples from Jordan and India, the causes of the emergence of principal-agent problems were discussed and practical approaches for possible solutions were highlighted.

Ashok Gulati (India) discussed some of the key incentive issues related to financing rural infrastructure, drawing on experience with pricing irrigation water and rural electricity in India. The government recovers less than 10 per cent of the costs of providing irrigation water and rural electricity through direct user charges, hence nearly all the costs have to be recovered through indirect taxes. This leads to three important problems. First, because it delinks incentives for water and power use from their true costs, farmers have every incentive to overuse these inputs, with resulting economic and environmental



costs. Second, because the institutions that supply water and electricity do not collect much revenue from their users, they are dependent on financial transfers from the government. This severely reduces their incentive or ability to operate on a financially sustainable basis. Third, since farmers do not pay for these services, they have little leverage over the quality of service they receive, which leads to poor service provision and corruption. Gulati said that India was in the process of trying to reform these service systems, but that it is politically very difficult because of powerful vested interests. The government would like (a) to increase water and power user charges to recover directly much higher shares of the supply costs, (b) to have the supplying institutions collect these user fees themselves and to reform their charters so that they are financially responsible for their own affairs and are fully accountable to their users, and (c) to open up the water and electricity sectors for private capital investment, with the government playing an appropriate regulatory role.

A lively discussion ensued that highlighted the widespread nature of incentive and financial problems in the provision of rural infrastructure services around the world, and the difficulties of reform because of vested interests and political intransigence. There is urgent need for further reform of the institutions that provide public services, including a greater role for the private and civil sectors where appropriate. But there is also danger in holding future rural investments hostage to such reforms, because of their critical importance for agricultural growth and rural poverty reduction.