

# The Role of Transportation in the Global Food System

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## Transportation and Geography Rediscovered

I'm really delighted to see the general economics profession rediscovering the importance of transportation costs and geography in international trade considerations. The agricultural economics profession in the 1960's and into the 1970's did an awful lot of spatial equilibrium modeling. And, of course, the cost of transportation was one of the most fundamental variables in any spatial equilibrium model. Some of you may be familiar with a survey of world trade modeling I did that came out as an ERS bulletin in 1982 or 1983, which had a whole section on spatial equilibrium models and spatial models.

## Transportation Costs Are Like Tariffs

Let me just mention one important equation: *price in the exporting country multiplied by the exchange rate, plus the transportation cost times one, plus the tariff rate, equals price in the importing country.* In trade, we always talk about the possibility of having prohibitive tariffs and what an impediment the tariff wedge can be to international trade. But if you look at this equation, the transportation cost is just as significant as the import tariff so that high transportation costs can work against trade flows in exactly the same way as high tariffs. Anything that brings down transportation costs, whether it's technological change or structural change in the industry, can reduce the wedge between the price in the exporting country and the price in the importing country. Lowered transportation costs can have as positive an effect on promoting international trade as a reduction in tariffs negotiated over years and years in subsequent rounds of international trade negotiations in the GATT or the WTO.

The study of transportation and transportation costs was in vogue back in the 1960s and 1970s, but later we in the agricultural economics profession tended to forget about transportation and focus much more on trade policy. Trade policy was somehow sexier and more exciting. (Maybe because it's easier to get trips to Geneva if you're working on tariff rates than if you're working on transportation costs.) But transportation has always been an important variable and it's important that it is coming back into vogue. Transportation is also coming back into vogue in the international development community. Public works projects, particularly road construction, were important in foreign aid programs in the 1960s into the 1970s, but infrastructure projects also went out of vogue in the foreign aid business in the 1970s and only very recently have come back into vogue.

## The World Bank's Interests in Infrastructure and Transportation

I've been asked to make a few comments on what the World Bank is doing in this area right now. I can speak with the authority of eight months at the World Bank, but I think I have picked up some sense of the changes that Mr. Wolfensohn is bringing since he came to the Bank. One of the important things that he has caused the Bank to do is carefully review the appropriate role of government in the process of development. And, also, how we might change the public/private

balance in investments in developing countries, particularly investments in things that once were the domain of the public sector.

In particular, Mr. Wolfensohn has focused our attention on making poverty reduction the most important mission of the World Bank. Poverty reduction is front and center in the bank's current mission statement. Around the world today, about 1.2 billion people live on incomes of less than \$1 per day per capita. About 70 percent of these people live in rural areas that are generally not integrated into either their national economies or into the international economy. And, as Wolfensohn has focused our attention on the poor and where they are, it's drawing into bold perspective the importance of investments, both public and private, in facilitating economic development in those rural areas.

### **Public and Private Roles in Investing in Infrastructure and Human Capital**

As we've gone through the process of redefining the Bank's role, one of the things that Mr. Wolfensohn has asked us to focus very carefully on is being sure that the Bank is not supporting activities that could be much more efficiently undertaken by the private sector. In particular, we need to focus on creating jobs and income streams, which are the fundamental forces for reducing poverty in low-income countries, both through public investments and by creating an environment conducive to successful economic development.

And as we've focused on those important public investments, two areas that jump to the forefront are infrastructure and human capital formation. Infrastructure includes roads, ports, telecommunications, and rural electrification. Obviously, some infrastructure can be built by the private sector, but some will have to remain the responsibility of the public sector. In urban areas in developing countries, significant progress has been made in the last 20 years in inducing the private sector to participate in infrastructure investments programs, such as build-operate-transfer (BOT) systems. Another example is collecting tolls to pay for interstate highways or expressways around cities. But the further you get from cities into areas where the population density is smaller and where the density of economic activity is lower, much larger inducements will be required from the public sector to get the private sector involved.

Historically, most rural roads have been a public sector responsibility. But in rural electrification and telecommunications, obviously, the private sector plays an important role. Of course, there too, it may take some public sector inducement to get the private sector involved. So we're looking for creative ways to induce the private sector to invest in rural roads and in telecommunications, as well as in electrification. Investments in rural roads are key, because we've got to get transportation costs down in rural areas.

We're finding that in many parts of the world, in Africa in particular but not only in Africa, there are much better agricultural technologies available than have been adopted. These technologies haven't been adopted because they don't pay off for farmers. The cost of transporting fertilizer to farms is prohibitively high. The cost of moving products from the farm to the cities is prohibitively high, and there is simply no net profit left for a farmer who adopts new technology. These farmers need improved transportation to bring down costs before they can adopt improved technologies

and before rural economies can be integrated into national economies. Then, not only will these rural communities begin contributing to the GDP, but they will also enjoy lower rates of poverty.

In addition to infrastructure investments, public sector investments are needed in schools, in health care, and in safe drinking water to improve human capital.

And, finally, the third role of government is to provide the enabling public policy environment, including:

- A commercial code that defines the rules of the road for a functioning market economy.
- A legal structure that defines property rights, particularly in land and intellectual property, and that permits those property rights to be registered, transferred, or pledged as collateral.
- Honest weights and measures.
- The other public policies needed for a functioning market economy.

After securing the necessary infrastructure, human capital, and public policy, the best thing for the government to do is get out of the way and let the private sector function. That is generally the philosophy that Mr. Wolfensohn is promoting within the Bank.

### **Decentralizing the Bank's Operations**

Mr. Wolfensohn is also working to decentralize the bank's operations and move more of its human and financial resources out to the countries where we work. The Bank should then be able to play a more effective catalytic role than it has historically when it lent to governments substantially in support of public sector activities that could have been much more efficiently carried out by the private sector. In a nutshell, that's the changing perspective at the World Bank.

We're putting a lot higher priority on investments in world infrastructure, both directly through governments as well as in public/private partnerships to get the private sector to do as much as possible. The governments of developing countries certainly don't have the resources to build all the necessary infrastructure or to build it as fast as it's needed. Once you've induced the private sector to do as much as possible, the public sector can fill in.

### **Pacific Food Outlook: Emphasis on Infrastructure**

Finally, I would like to mention a project that Bill Coyle and I are involved in together, along with Carole Brookins, CEO of World Perspectives, Inc., one of our sponsors today. It's the *Pacific Food Outlook*, which is an activity of the Pacific Economic Cooperation Council (PECC). For the first two issues of this publication, I've had the privilege of chairing the forecaster's group, which has brought together forecasters from all 21 or so of the Pacific Rim countries that are members of APEC. I'm pretty proud of the job the forecasters have done in putting together this document.

But more importantly, I want to point out the emphasis this project is placing on infrastructure. In the 1998-99 issue, there was an introductory section on the importance of rural infrastructure to

the functioning of the global food system. This year's *Pacific Food Outlook*, which will be released this fall in Auckland at the time of the APEC heads-of-state meeting, includes a more explicit, fuller treatment of infrastructure and the extent to which it either impedes or facilitates the functioning of the Pacific food system. This is not just production agriculture, but the whole food system from production through processing to the consumer, whether that consumer is within the country or in other parts of the Pacific Rim. I think it's going to make a major contribution to the literature. We're going to be meeting in Tokyo with the authors of this year's *Pacific Food Outlook* in about three weeks and then through the summer the report will be finalized and come out in the fall. So look forward to the release of the 1999-2000 *Pacific Food Outlook*.

Again, thanks a lot for inviting me to open this session and make some prefatory comments.