THE HOUSEHOLD
The Neglected Link in Research and Programs for Poverty Alleviation[1]

G. Edward Schuh[2]
Hubert H. Humphrey Institute, University of Minnesota
155 Humphrey Center, 301-19th Avenue South
Minneapolis, Minnesota 55455 USA
Telephone: 612-625-8388
Fax: 612-624-9084

ABSTRACT

Efforts to channel scarce agricultural research resources to directly address problems of poverty in agriculture are misguided. The failure to recognize the general equilibrium effects of agricultural modernization in alleviating poverty in the general economy is a significant problem, causing agricultural research to not receive credit for its contribution to poverty alleviation. That issue is analyzed as the first part of the paper. The importance of the household as the place where a significant share of a society's human capital is produced is discussed in the second part. These forms of human capital include cognitive skills, values, vocational skills, nutrition and health. The way each contributes to poverty alleviation is discussed, together with the importance of new technology for the household. The delivery systems needed for strengthening households constitute the final part of the paper, together with a discussion of rural development. These include improved delivery systems for health care, research on the household, and delivery systems for the transfer of technology to the household.

[1] Presented at International Workshop "Assessing the Impact of Agricultural Research on Poverty Alleviation," held in San Jose, Costa Rica, September 14 - 16, 1999.

[2] Regents Professor in International Economic Policy, University of Minnesota, and Orville and Jane Freeman Professor of International Trade and Investment Policy, the University's Humphrey Institute of Public Affairs, Minneapolis.

THE HOUSEHOLD
The Neglected Link in Research and Programs for Poverty Alleviation

I laud the organizers of this Workshop for taking as its theme the assessment of agricultural research on poverty alleviation. I also appreciate the opportunity to discuss the importance of the household and its relative neglect as the means of addressing the problem of poverty. There can be no more important issue than the persistence of poverty on a global scale. It is the source of much of the tension on the international scene. The neglect of the household as the means for addressing poverty is manifest. It simply does not receive much attention by either national or international development agencies.

Before getting into the main part of my remarks, however, I would like to express my concern about the tendency to neglect the general equilibrium effects of introducing new production technology into agriculture, and the widespread belief that substantial resources should be allocated within agricultural research programs -- as conventionally conceived -- to the alleviation of poverty within the agricultural sector. This is an analytical and policy trap, and has caused current investments in agricultural research to contribute less to the alleviation of general poverty than they might otherwise have contributed.

Let me clarify. When thinking about agricultural research the tendency is generally to think about the contributions of biological and natural scientists, and about the new production technology they produce. Less often do we think about the contributions of agricultural social scientists and the new institutional arrangements they might create. Moreover, the tendency is to focus on poverty within agriculture, and especially among small farmers. The expectation is that there is a technological "fix" for the small farmers, and that agricultural research institutions should find it.

If more attention were to be given to the general equilibrium effects of introducing new technology into the agricultural sector we would recognize that it is the consumers who ultimately benefit from the new production technology, a few caveats aside, and that in fact the introduction of new technology tends to create relative poverty in the agricultural sector. The failure to recognize these two propositions causes a general failure to recognize the substantial contributions agricultural technology can make to poverty alleviation in the economy, even when it benefits mostly the large farmer, and a failure to recognize that the problem of rural poverty in general has to be solved by programs that are outside of agriculture per se.

I emphasize these points because the failure to recognize their importance creates serious tensions and stresses within the agricultural research system, while at the same time subjecting agricultural researchers and the agricultural research establishment to misguided criticism. It is difficult to imagine a more counter-productive situation than this, for it causes us to sacrifice some of the substantial contributions to poverty alleviation and to economic growth and development that agricultural research can make. It also leads to a failure to address the problem of poverty alleviation in a proper way.

Because these issues are so important to the agricultural research establishment as a whole -- in fact, they are vital to its future -- I address them in the first part of the paper. In the second part I then turn to a discussion of the household as the organizational unit to which we should direct our efforts for poverty alleviation -- in the urban as well as the rural sectors. The third section discusses delivery mechanisms for serving the household, and especially the rural household. At the end I will have some concluding comments.

The Role of Production Agriculture in Poverty Alleviation

Without violating basic propositions let me simplify in order to be brief. Production agriculture contributes to poverty alleviation if it benefits from a steady stream of new production technology. This contribution is realized primarily through the general equilibrium effects of technological change, not through the direct effects of raising farmers' incomes.

Consider the introduction of new production technology in the production of staple commodities. The demand for these commodities tends to be both price and income inelastic. Consequently, as output increases from the introduction of the new technology, the price of the commodity will tend to decline. That decline in price is equivalent to an increase in the per capita incomes of the consumers of the commodity. These increases in incomes will be widespread in the society if the staple is widely consumed, and though they may be rather modest for the individual consumer, the sum over all consumers will tend to be quite large. That is why the social rate of return to investments in agricultural research tends to be so high.

The significant point about this result is that poor consumers will benefit in a relative sense since they spend a larger share of their income on food than do middle- and upper-income groups. Thus they experience relatively larger increases in per capita income.

Not so many years ago these points were well recognized by the development community. However, somewhere along the line we forgot them. Given the tendency of low-income developing countries to have such pervasive poverty, it is amazing that the agricultural research establishment fails to take credit for such a significant contribution to poverty alleviation.

There is an important labor adjustment problem associated with this process. The combination of a price inelastic demand, a low-income elasticity of demand, and the technological change means that labor will be displaced from agriculture under a fairly general set of conditions. That labor must seek alternative employment in the nonfarm sector. Those displaced tend to be those less competitive in the agricultural sector. Moreover, small farms will need to increase in size if they are to produce per capita incomes comparable to those earned in the nonfarm sector. Thus strong pressures are generated in the land market to expel labor from the sector, or at least to expel them as landowners.

This displacement of labor from agriculture is a developmental imperative. I know of no country for which the employment in agriculture does not eventually decline as economic development proceeds. Poverty alleviation efforts should thus be directed to helping the rural

emigrant make the shift to alternative employment as easily as possible, rather than to expend scarce research resources on trying to solve their income problem within agriculture.

This contribution of agriculture to poverty alleviation and economic development is not limited to the production of staple commodities. The modernization of the production of export crops can contribute as well, although the mechanism is somewhat different. In this case the conditions of demand are different, with the demand tending to be more price elastic. Moreover, the new technology will tend to make the domestic sector more competitive in international markets, thus creating incentives for the expansion of these sectors. Given that the production of export commodities tends in many cases to be labor-intensive, the modernization of the export sector can be directly employment enhancing, or at least less labor displacing than for the staple commodities.

That is not the end of the story, however. Increased exports earn the country additional foreign exchange. That foreign exchange can be used to service the foreign debt, or to finance a higher rate of economic growth. If the latter, additional employment will be created, with the potential for poverty alleviation being significant, albeit typically in the nonfarm sector. It is in the nonfarm sector where the new jobs are needed, however, if they are to absorb the labor being pushed out of agriculture.

If the increase in foreign exchange from the expansion of exports should be substantial, the exchange rate may eventually be higher than it would otherwise be. This can again have some very significant effects on poverty alleviation due to the decline in the price of tradables, and thus in a pervasive way in the economy.

The puzzle is that supporters of agricultural research have so badly neglected these important contributions of new production technology to poverty alleviation. They need not be quite so defensive about the income distribution effects of agricultural modernization, even though there will be a tendency for that income distribution to become more unequal <u>within</u> the agricultural sector if the labor transfer process does not take place efficiently. The challenge is to look beyond the agricultural sector per se, and to recognize the broader contributions to poverty alleviation in the general economy from the modernization of agriculture, and especially among the urban population.

It is important to note in concluding this section that some agricultural producers <u>do</u> share in the benefits of the new production technology. This includes the early adopters of the technology in the staple sector, those who remain in agriculture, and producers in the tradable sectors. For those who remain in agriculture, the increase in resource productivity, which the new technology makes possible, is essential if per capita incomes in agriculture are to keep pace with per capita incomes in the nonfarm sector.

<u>The Household as the Vehicle for Poverty Alleviation</u>

Programs designed to promote economic development tend to focus on the firms in the economy, and economic development is the usual instrument for promoting poverty alleviation.

Presumably this is based on some strongly held beliefs that there will be important trickle down effects from such programs. Breaking the constraints on firm growth is viewed as the means to generate additional employment, and the additional employment is seen as the key to poverty alleviation.

Agriculture is no exception to this general rule. When we think about the development of agriculture we tend to think about agricultural research to generate new technology for the farmer, the easing of credit constraints so farmers can adopt the new technology, the modernization of the modern input sector so farmers have adequate supplies of fertilizers and pesticides, and perhaps some investment in the physical infrastructure so transportation and communications services are available at a lower cost. If women, as members of the household, receive any attention it is usually to have women extension agents to work with women producers, presumably because it is the woman who is the decision-maker and does the work on the farm unit.

Traditional and widespread as this perspective may be, it is surely misguided. Poverty alleviation should be focused directly on the poor, and on the households in which they are located. Moreover, poverty alleviation requires investments in human capital so as to raise the productivity of the disadvantaged. Much of this human capital is produced in the household. That suggests that an important share of resources dedicated to economic development, or to poverty alleviation, should be directed to the household.

The new household economics teaches us that the household should be treated as a firm. The household is a firm in the sense that the household acquires inputs from the market economy and combines them with labor from the household to produce final goods and services for the family and other members of the household. The main point of this part of my paper is that an important part of the human capital in society is produced in the household, and thus that the household should receive more attention as the focal point of poverty alleviation efforts.

The dimensions of this human capital are familiar. They include education and the development of cognitive skills, values, vocational skills, health, and nutrition. Probably less recognized, but still important, is the technology used in the household. In terms of poverty alleviation, the technology for the household may be as important as any of the other components of human capital.

Let's consider why each of these dimensions of human capital is important. We can begin by noting the complementarity among the various components. Nutrition, for example, is critical to sound health. Nutrition and good health, in turn, are critical to the absorption of cognitive and vocational skills. And cognitive and vocational skills are critical to the adoption of new production technology on the farm or in other production units.

An important feature of the development of cognitive and vocational skills is the extent to which these skills are developed within the household. For young children, every day is a learning experience. And it is the parents, siblings, and other adults in the household who do a major share of the teaching, almost all of it in very informal ways.

The values for participation in a modern economy and society are also developed in the household. Although development economists have not given values much attention as factors contributing to economic development, other disciplines, and especially educators, do.

The development of cognitive and vocational skills, and values, are critical for the adoption of the new production technology that might be available from local research institutions. They are also essential for making more efficient use of the resources available to the family, both in the household and on the farm unit. The late Professor T. W. Schultz also reminded us of the importance of cognitive skills in exploiting situations of disequilibrium in the economy, potentially an important contributor to economic development.

The more important contribution of these skills and values, however, may be in helping the out-migrants from agriculture find alternative employment. As noted above, such alternative employment is essential if rural poverty is to be reduced. With adequate cognitive and vocational skills the members of the household will not only have the skills to search out and find alternative employment, but they will be employable when they find it. This out-migration helps raise the incomes of those remaining in agriculture. It also helps speed the adoption of the new technology, thus enlarging the contribution of that technology to general economic development.

Let me turn next to nutrition. The World Food Summit back in 1996 reminded the world once again of the importance of food security, and of the fact that although we are gaining in relative terms in solving this problem, the absolute number of food insecure people is still trending upward. That Summit, and the writings of Professor Sen, have also reminded us that food security is essentially a poverty problem, not a food production problem.

Sound nutrition is produced for the most part in the household. Clearly, the family has to have the means to acquire adequate amounts of food. However, it is in the household where the food is selected to provide an adequate diet, and where it is prepared. This requires both knowledge and vocational skills.

Over time families in traditional societies have learned what will provide an adequate diet by methods of trial and error. However, in a rapidly changing economy, which often characterizes countries on the road to economic development, the raw materials for an adequate diet will frequently change. It is under those conditions that knowledge about the principles of nutrition becomes important.

We noted above that an adequately nourished population is essential for the absorption of both cognitive and vocational skills. However, adequate nutrition obviously affects the physical productivity of members of the household as well, a factor that is important in the physically demanding tasks on farms. It is also important in many forms of off-farm employment, especially for low-skilled workers.

On the issue of sound health, it is interesting that the development community only recently discovered the importance of this dimension of human capital as a constraint to

economic, and especially to agricultural, development. My colleague, Professor Ruttan, brought together the leading thinkers in this field a few years back, and ultimately some of the important literature. It doesn't require profound insights to realize that unhealthy people have little energy to do physically demanding tasks. Moreover, we have known for some time the role of sound health, especially among the young, in the absorption of cognitive and vocational skills.

Finally, let me turn to the issue of the technology for the household. We have emphasized the extent to which the various dimensions of human capital are produced in the household, which makes the analytical tools pertinent to the firm important in understanding how to make more efficient use of the resources available to the household. However, in point of fact, little attention is given to providing new technology for the household, to alleviating the time constraints in the household, or to the management of resources generally in the household.

Somewhat ironically, we give much attention to providing new production technology for the farm unit, but neglect the provision of new production technology for the household, where a large share of a society's resources are located. Similarly, we give much attention to the organization and management of resources on the farm unit, but neglect the same issues in the household, where the most valuable resources in a society are produced. We give a lot of attention to the delivery of new technology and management information for the farm production unit, but fail to do the same thing for the household.

The poignant picture of women and children fetching firewood and carrying water, often over relatively long distances, is familiar to anyone with experience in the developing countries. In recent years there has been growing recognition of the importance of wells to supply water locally, and of new energy efficient means of doing the cooking. This is prima facia recognition of the importance of new product technology for the household. However, it is often justified on the basis of relieving the drudgery of women rather than on the release of time for more productive activities it makes possible.

What is less recognized is the importance of process or unembedded technology for the household. Having the knowledge to make more efficient use of the resources available in the household requires research on the household. Such research is sorely lacking in most countries, even though the households and the resources they have available to them tend to be location-specific. Equally important, there is a general lack of extension programs to effectively deliver whatever knowledge is available to the household.

A look back at agricultural development programs in the United States will reveal that the importance of new technology for rural households was recognized almost from the inception of those programs. The delivery system for transferring this technology was imbedded in extension agents who were referred to frequently as home demonstration agents since their role was to demonstrate the new technology. Employment as home demonstration agents was an early form of skilled employment for women as they were brought into the labor force in that country. Moreover, land grant universities typically had colleges of home economics or domestic sciences in which these women were trained and in which research to produce the new technology was undertaken.

As labor became increasingly scarce in the U.S. economy during the post-World War II period, considerable effort was given to time and motion studies to identify ways of making more efficient use of labor in the household. That was early recognition of the importance of time constraints within the household, especially as women sought gainful employment in the off-farm sector.

The contributions to knowledge did not stop there, however. These colleges did research on textiles, on nutrition, and on design issues. The attention given to clothes and design caused these colleges to be criticized because these issues were thought to be frivolous. However, much of that criticism strikes me as unfair. Researchers were truly producing the new technology for the household as economic and technological conditions in the economy changed, and the extension agents were delivering that new technology.

Many of these colleges in the United States have now changed their names to colleges of human ecology. The configuration of their programs has not changed all that much, however. Departments of design and textiles, of housing, and of nutrition can still be found. In fact, an important dimension of the extension programs of these colleges, and of today's land grant universities in general, is in teaching the poor how to make more efficient use of the food they receive through welfare programs, and in teaching them the principles of sound nutrition.

The development of new technology for the household is important because it raises the productivity of labor in the household, in addition to providing the means for making more productive use of other resources in the household. This has important implications for the production of the human capital, which is so critical for alleviating poverty in the household. It also has implications for the ability of the family to supply labor to the productive activities on the farm, or to participate in the off-farm household.

To conclude this section, the importance of the woman in the household deserves special mention. Women typically are the ones who care for the other members of the household, and who produce the nutrition, health, and instruction in the household. Raising their knowledge level, and thus increasing their productivity, is critical to the overall welfare of the household. If women work on the farm, or in off-farm employment, they usually continue to do the work and caring in the household. Extension programs which deliver knowledge on how to more effectively carry out their services within the household will have a much higher payoff to poverty alleviation than programs which teach them to be better farmers.

<u>On Delivering Poverty Alleviation Services to Households</u>

Delivering the services to households that will help in alleviating poverty is an important issue of institutional design and development. D. Gale Johnson has frequently noted that the failure of governments relative to agriculture is that they tend to under-invest in agricultural research, in the education of the rural population, and in the physical infrastructure for rural areas. Professor Johnson's concern is with the production side of agriculture. This list can usefully be extended if one is concerned about the alleviation of poverty in rural areas.

The importance of strengthening schooling and the provision of vocational training for the rural population probably needs no additional attention for this audience. It is increasingly recognized as a constraint on poverty alleviation among the rural population, even though steps to reduce the discrimination against the rural sector in this area are still rather limited.

Policy makers also discriminate against the provision of health care services to the rural population, however, and this issue should be added to Johnson's list. Effective institutions by means of which health care services can be delivered to rural populations are critical if the problem of rural poverty is to be reduced or eliminated. Such investments will have a high social payoff, both on the production side of agriculture and in terms of poverty alleviation.

The development of effective extension services for women, and for the households, should also be high on the list of priorities for the alleviation of poverty. It is somewhat ironic that there is growing recognition of the importance of delivering agricultural extension services to women. However, there is much less recognition of the importance of an effective extension service for delivering household technology to women and to other members of the household.

Making more efficient use of labor in the household will make it easier for the children in rural households to go to school, thus further increasing the investment in this important form of human capital. Raising the productivity of the members of the household through improved nutrition and health care will also help to free up labor for both more productive activities and for leisure. However, as noted, both of these contributions will also increase the household investments in the production of human capital, and possibly increase the supply of labor to farm activities, while at the same time facilitating the adoption of farm technology.

Finally, there is the rather large issue of rural development, which Hans Binswanger, Alex McCalla, and the World Bank have brought back to our attention. The discussion of this issue could be a paper in its own right, since it is critical to alleviating poverty among the rural population. However, it also has important implications for the household and thus I want to briefly touch on the issue here.

The rapid migration of labor from agriculture and rural areas to urban centers, popularly known as urbanization, effectively drains human capital from rural areas. In that sense it imposes negative externalities on rural areas, thus impeding their growth and development. At the same time, the accumulation of this labor in urban centers imposes negative externalities on those centers in the form of congestion, pollution, and rising costs for transportation costs, water supply, and sewage services. It is difficult to imagine a more counter-productive process to further economic development generally!

This process need not be so strongly driven in this direction. For the most part it is the result of the under-investments in education and rural infrastructure, which Gale Johnson calls to our attention. However, it is also the result of large subsidies, both explicit and implicit, for the location of economic activities in urban areas. More balanced development could be obtained by increasing the investments in rural areas, and by reducing or eliminating the subsidies for urban development.

The point I want to emphasize, however, is that by draining the human capital from rural areas the pervasive urbanization, which characterizes so many economies today, makes it very difficult to alleviate rural poverty. Reversing or slowing down the out-migration from rural areas in productive ways can contribute importantly to the alleviation of rural poverty. Moreover, it will make the investments in the household outlined above more productive, with a higher rate of social return.

Concluding Comments

Professor Schultz reminded us in his Nobel Address of how difficult it is for upper-income development economists to understand what it means to be poor, and to understand the conditions under which the poor live and make their decisions. The households of the poor are poorly understood by both development economists and by policy makers alike. If we are truly to alleviate poverty by means of agricultural research we need to broaden our concept of agricultural research to include the rural social sciences so we can understand the plight of the poor and what can help them to improve their lot. Institutional design is a critical issue. At the same time, a better appreciation of how the modernization of agriculture can contribute to improving the lot of the poor and disadvantaged will help in making more efficient use of scarce agricultural research resources.