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October, 1980

THE ROLE OF WOMEN IN MODERNIZING AGRICULTURAL SYSTEMS: SOME CRITICAL ISSUES

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1. It is currently recognized by agricultural economists that increased food production through increased agricultural productivity can only partly satisfy the food consumption needs of the poor in LDC's. This problem is even more acute for the food deficient Asian and Sub-Sahara African low-income countries. Even with increased growth and productivity, the absolute numbers and percentages of landless and near landless as well as of unemployed and underemployed is increasing (especially in Asia) and the food consumption and nutritional status of the poor is not improving.
2. It has been recognized that the above pattern occurs because the efforts to modernize agricultural systems through farm technology, new high yield crops, marketing innovations and infrastructures, loan programs and other agricultural inputs and innovations have been selected with efficiency and productivity as sole criteria. Since farm size is an important variable for efficiency, all these agricultural innovations have disproportionately benefitted larger farmers and have widened the rural income differences often through increased unemployment among the poor.
3. It is, therefore, increasingly recognized that many aspects of modernizing agricultural systems such as, farm mechanization and in general, farm technology or the introduction of herbicides may have economic gains and economic and social losses for the same or different groups of the rural (and/or of the urban) population. It is, therefore, increasingly accepted that an evaluation of modernizing

agricultural inputs and innovations is necessary not only from the point of view of increased cultivated acreage, economic efficiency and agricultural productivity but also from the point of view of labor absorption and income distribution. Furthermore, it is also becoming accepted that even the selection of crops as well as of farm technology should be guided by labor absorption and not only efficiency considerations and that marketing research should focus on innovations and activities that can benefit the poor.

4. Despite this significant step beyond efficiency and productivity as criteria in agricultural modernization to include labor absorption and income distribution concerns in order to minimize the adverse affects of modernization on the small farmers and the landless, there is little acknowledgement in the mainstream agricultural economics literature that:

- a. there are men and women small farmers, near-landless and landless;
- b. in many LDC's, and rural regions within them--including low-income LDC's in Asia and Sub-Sahara Africa with serious food deficits, due to migration, desertion and widowhood--from one-third to more than two-fifths of rural households are female-headed and such female-headed households are disproportionately represented among the rural poor (that is, the landless and the near-landless);
- c. in most LDC's women do most of the agricultural labor not only in food but also in cash crops, this pattern being more prevalent among the rural poor and in low-income regions, especially in Sub-Sahara Africa, Southern and Southeastern Asia and Central America and the Caribbean as well as some Middle Eastern countries such as Syria, Yemen and Turkey. Hence disparities in women's access to agricultural

information and training in introduced agricultural inputs and innovations represents a critical constraint to increased agricultural productivity and efficiency;

- d. in landless households, women's income from hired labor is essential for food consumption and survival as it often represents more than one-third of the total family income.

5. Partly because men and women have not been often differentiated in agricultural economic studies of the impact of modernizing agricultural systems on the rural poor in LDC's, it has not yet been recognized that even among the rural poor men tend to disproportionately benefit from agricultural innovations while women tend to disproportionately incur employment and income losses. The fact that among the poor, men benefit and women lose disproportionately from many modernizing agricultural inputs and innovations has serious implications for agricultural productivity, income availability for food at the household level, labor absorption and unemployment, increased landlessness and widening of rural income differences. More specifically:

- a. Since in many countries and regions one-fourth to half of the poor rural households are permanently or de facto headed by women, women's lesser access to land (through land reform or settlement schemes), agricultural information and training, technological information and training, credit, cooperatives, marketing outlets and farm technology than men, tends to diminish their ability to learn about, participate in and profit from agricultural innovations and to create market demands that may influence agricultural programs and policies which could meet their needs. Therefore, in many rural areas of the Third World, agriculture cannot be modernized, productivity cannot increase and households cannot escape poverty as long as rural women cannot

benefit as much as men from modernizing agricultural and technological inputs.

- b. Landless or near-landless women who head households or who contribute substantially to household income through hired farm labor are disproportionately affected by farm technology such as rice husking technology (steel roller hullers) introduced in Indonesia, Bangladesh and Southern India or mechanized harvesting in Indonesia. The use of this farm technology although it may prevent food losses or increase efficiency has been found to reduce food availability for the poor households in the areas in which they are introduced because of the significant income reduction resulting from poor rural women's lesser employment opportunities. Since the large majority of landless and near-landless households (whether female-headed or not) survive with the help of female employment, in addition to the impoverished nutritional status of the family, increased landlessness is often the end result as the near-landless are forced to sell their land in order to survive.
- c. Income disparities between rural, low-income men and women have widened because women are displaced from hired farm labor; because they are not given agricultural and technological skills to enable them to use farm technology and to participate in modern agriculture; and because they have less access to loan programs, cooperative marketing enterprises and community level decision-making about the appropriateness of modernizing agricultural inputs and innovations to be introduced in their community.

6. As increased agricultural productivity does not guarantee a balanced income distribution and increased food availability and consumption among the rural poor, focusing modernizing agricultural inputs and innovations to the poor does not necessarily guarantee that men and women will equally benefit from such inputs and innovations or that the nutritional status of the poor families will improve. When adding labor absorption and income distribution to the criteria of efficiency and productivity in making important decisions in modernizing agricultural systems, it is necessary to further differentiate labor absorption and income distribution by sex as well as farm size. The addition of all these criteria does not necessarily imply that efficiency and agricultural productivity will be seriously compromised, although in some cases compromises may represent the best solution. Most often additional components must be added to agricultural programs to help equalize benefits between poor rural men and women, depending upon local conditions of land scarcity, labor scarcity, prevalence of landlessness and near-landlessness, availability of non-farm income generating activities, prevalence of female-headed households, and socio-cultural attitudes towards women. The following components added to agricultural programs could help equalize such benefits by lightening women's work overload so that they can take advantage of agricultural training of high yield varieties, fertilizers and irrigation, requiring more intensive labor:

- Planting fast-growing trees near villages and introducing a small communally-owned mechanical saw;
- Increasing water points, wells and general distribution facilities in near-by areas;
- Introduction of light transport facilities which can be built locally and can be easily used and even repaired by women;

- Appropriate technology for preparing and cooking food which is cheap, locally constructed and easy to repair (preferably by the women themselves) e.g. cassava grinders, hand-operated grinding mills, small presses for palm oil, coconut milk or sugar cane, etc.
- Communal arrangements for child care which help safeguard daughters from paying the cost for their mothers' income-earning capacity (by not being able to attend school) and help diminish the negative component of mothers' absence on the otherwise positive relationship between mothers' income increases and children's nutritional status.

Furthermore, in order to facilitate labor absorption of landless and near-landless women and to increase the efficiency and productivity of women farm laborers who contribute most of the labor on their own land or as hired labor, the following special concerns must be kept in mind:

- Women must be trained as agricultural extension agents and auxiliaries at all levels in order to help equalize small farmer men's and women's access to agricultural information and participation in innovative agricultural programs and agricultural training.
- As it is important for cooperatives to be carefully organized so as not to be dominated by the rural elite, it is important to organize separate women's marketing and/or credit cooperatives (which may also cooperatively own farm machinery) in order for the women to be gradually educated how to effectively run these cooperatives by themselves.
- In order not to further increase the existing competence gap between rural men and women in terms of agricultural and technological skills and information, women must be given the same access to all such information, training and resulting use of technology leading to increased efficiency, productivity or employment opportunities.