

## THE IMPACT OF AGRICULTURAL DEVELOPMENT SCHEMES ON WOMEN'S ROLES IN FOOD SUPPLY

Ingrid PALMER

### 1. FOOD STAPLES

National food self-sufficiency is really about grains and other staples which are a substitute for major food imports. But farming household self-sufficiency is relevant because rural food deficits lead to migration to towns.

Colonial policy was designed to extract primary produce for the industries and tables of Europe. This policy has been widely continued since independence. But in the last two decades or so the failure to promote import-substitution or export promotion employment has led governments to increase the output of grains in order to feed urban populations and reduce food imports. Essentially the means and effects of this extraction have been the same as for export crops. Credit, seeds, fertilizers and extension services have been directed to male heads of household, who emerge as custodians of the household's labour, cash income and prime land. To the extent that improved methods of production have covered all the household's land it cannot be said that women have been discriminated against. But in Africa men's grain fields have enjoyed productivity improvements while women's staples production, and even the same grains on women's fields, have been ignored (see JACKSON - 1984 for Nigeria and DEY - 1980 for the Gambia). The invisibility of women to planners extends to women heading farming households.

The wasted opportunities are apparent. But the efficiency of household resource allocation can also be questioned. When we say that husbands and wives have separate fields we mean that they are managed and their produce is appropriated separately by husband and wife. But

the sexual division of labour in field tasks means that labour is exchanged. Higher productivity methods of producing men's crops invariably lead to an intensification of women's labour on them. It is doubtful whether the theory of surplus labour in peasant agriculture was ever valid for women's labour. More work on some fields means less work on others. How do we know that all household labour is optimally allocated over the entire household holding ? To the extent that women expect some return to themselves or to household maintenance costs, they will agree to work on their husbands' crops. However there have been cases where women have refused to weed men's fields as carefully as technical instructions decree, so that potential yields are not realized. In these cases the women are expressing a desire to cultivate their own fields first. Of course, where husbands have the power to appropriate the best of their wives' fields, and do so, women's opportunity costs are simply eliminated. They have no alternative but to work for their husbands. This may or may not be the most efficient allocation of resources, depending on what value is placed on foregone women's farming. But how much of the cash income is used to compensate for women's lost contribution to family maintenance, or to augment the former level of the household consumption budget ? We know from class analysis that agricultural development schemes usually benefit powerful farmers most through their privileged access to cheap credit, etc. They also face a buyer's labour market where there are many landless people. Male heads of household receiving government attention and in a position to commandeer family labour are in an analogous position. There is now a substantial literature to dissuade planners from believing that the gains to men farmers are the gains of the household as a whole. While farming couples in Asia tend to produce and consume more corporately than in Africa, there is some evidence that the less women have sources of personal income, the weaker is their voice in expenditure decisions (see for example, SAJOGYO *et al.* - 1980 ; and ACHARYA and BENNETT - 1981). Also that if large surpluses of rice are produced there can be a shift in effective control of this income towards men (PALMER *et al.* - 1983). Does the farming household itself become more or less self-sufficient in food by these discriminatory agricultural strategies, whether or not its real and imputed production increases ?

But what of landless women in need of wage employment to meet food bills ? The large increases in rice output in green revolution areas of

Asia have had a mixed effect on women's participation in field work. Some Indian studies show that additional labour has been hired for weeding and post-harvest activities, but that there has been a decline in demand for labour for transplanting (SHARMA - 1975). In Java there has been a general displacement of female wage workers in rice production. Handweeding is increasingly giving way to rotary or toothbed weeders. In addition groups of able-bodied men are now hired for wages to harvest the crop where formerly much larger numbers of the poorest women would harvest it in return for a share of the crop. The women (and children) might receive rice amounting to the equivalent of 540 adult consumption-days, a significant proportion of the total annual rice bill of a poor household (STOLER - 1977).

With the change in harvesting labour and reduced demand for handweederes, the practice of providing women jobs in transplanting and/or weeding in exchange for a meal and the later right to harvest has been disrupted. Only transplanting jobs are available in the same quantity as before, but they do not provide women with direct access to food crops.

## 2. SECONDARY FOOD CROPS

These crops now include some (such as millet and sorghum) which were formerly considered main foods, but which have been relegated to the second division because of the emphasis on wheat, rice and maize. Others are beans, vegetables, cassava, and fruit.

Very little attention has been given them since they are not directly related to the issue of food imports and are primarily seen as self-provisioning foods or foods for local rural markets. With the assumption that they have no major market outlet how could fertilizers and new seeds be purchased, or credit repaid? The only significant attention given some of them has been from Home Economics services which urge women to grow more of certain items for the family's nutrition.

This policy is short-sighted. Secondary foods are sometimes also imported. Some are the chief source of cash income to women. In rural markets of Africa and Asia women can be seen surrounded by baskets with a variety of foods, many of which are non-perishables and so could be sent further afield. The response of women to new markets is quick. Women living near an all-weather road to Yaoundé in Southern Cameroon

have greatly increased their output of cassava and groundnuts from their food fields (GUYER - 1977). In the northeast of Thailand women have turned to growing vegetables and fruit for markets as far as Bangkok, 100 miles away, since good roads were laid down a decade ago.

In Java the gardens surrounding houses have for long been an important source of high value foods for rural and urban markets. For the poorer households they can return a cash income greater than rice cultivation. Both men and women work in them but women are mostly involved in marketing the produce. Yet a recent project to increase their productivity included a component of sending nutrition extension workers to talk to women and agricultural extension workers to talk to men. Such a model of how a household arrange its economy can interfere with women's authority to decide what is surplus to the household's immediate needs and which foods should be sold to purchase other foods.

What is important for planners to understand if they give attention to secondary food crops is that women must be presented with choices so that they can maximize their total gains, and that they are left free to decide which foods to sell and which to buy.

But the issue of secondary foods raises the spectre of the "household plot" much favoured by planners as a proper sphere of women. The imagery of household provisioning is immediate. But in Africa women's traditional "food fields" are much larger than a plot and a source of personal cash income to them. It is extremely dangerous for family welfare to undermine the original intention of this land allocation. In Asia the household plot, or garden, is small but normally its produce is mostly destined for the market. It is never entirely women's sphere. It is in China that the true potential of the Asian type of household plot is realized, and in this country they are encouraged for what they are, a major source of supply of higher value foods exchanged in the market. One does not hear of Chinese nutrition extension workers interfering with the choice of what to grow on them.

### 3. PARTICULAR EFFECTS OF SETTLEMENT SCHEMES

Settlements, sometimes with expensive irrigation laid down, have been a major part of government attempts at a national food strategy. But credit repayments and realized economic rates of return have had a dismal history. They have almost universally carried awful consequences

for women, and are therefore a questionable means of raising *per capita* food availability to farming households at least. They include not only a discriminatory agrarian reform element (life-long tenancies for men with the position of divorcees and widows left precarious), but commonly are modelled on the idea that the farm (that is grain or raw material crops) is men's affair, and that women raise as much as possible of the household's food requirements on a nearby plot (usually 0.5 to 1.0 hectares), as well as "help" their husbands. This subsidization by women of the net returns to cash crops is forced by the commandism behind the decreed land use. As far as can be ascertained there is never any serious attempt to analyse the real and imputed value of this model in terms of household cash income or food self-sufficiency. The worst effects of this model are seen in Africa because it is a gross perversion of traditional field systems.

The stories include common complaints : women work much harder than before ; they cannot feed their families from the small household plot and there is certainly no surplus for sale (even if there were markets near the settlement, which usually there are not) ; and with no alternative, as formerly, women are forced to work intensively, sometimes more than their husbands, on the cash crops over which they have no rights of appropriation (see, for example, CONTI - 1979, JACKSON - 1984, HANGER and MORIS - 1973). They lose sources of personal income, are totally dependent on husbands for money for food purchases, and face a severe labour constraint. Small as the household plots are they are sometimes left unutilized in the first years of settlement because of lack of time (see CONTI - 1979 and LUND - 1978). There is a need to re-think the land use pattern of settlement schemes in terms of both farming household and national food self-sufficiency. An aggravating factor is that planners like to select young nuclear families as settlers so that they are free from extended family financial obligations. But the upheaval and greater workload comes at the most difficult time in a woman's life cycle. She is cut off from family support systems. The model of a young nuclear, surplus accumulating unit, re-investing in higher productivity methods, enjoying higher standards of living and no doubt limiting family size, needs a thorough-going reassessment.

#### 4. PROCESSING AND MARKETING OF FOOD CROPS

Small scale processing and selling of food crops has been a source of income, skills development, and specialization for women. Where grain mills have been introduced in Africa they have eased the workload of women. But on settlement schemes a grain mill is part of a new of production relations which diminishes women's powers of appropriation and sources of personal income. If the women continue with their tradition of being responsible for the household's food supply this is another squeeze on household food self-sufficiency.

Ironically it was secluded Muslim women, totally ignored by the planners, who managed to swing the greater harvest of an irrigated scheme in Nigeria their way (JACKSON - 1984). The crops came from their own inherited land and as payment in kind for processing husbands' crops. Their Pagan sisters, on the other hand, suffered every conceivable consequence of an irrigated settlement scheme. The activities of the secluded women in processing crops and selling cooked food (for the necessary hired labour) contributed to an expansion of the local economy. SIMMONS (1976) and LONGHURST (1980) also point to the potential of women mostly confined to compounds in value-adding processing and distribution of food to local markets.

In Asia, village hulling machines and larger mills have reduced employment opportunities of the large class of landless women who would receive payment in any combination of a meal, wages or produce, for handpounding the rice. In Bangladesh it was often the only socially acceptable gainful employment a woman could do outside her own home. One writer (HARRISS - 1978) estimated that if the entire rice crop in Bangladesh were processed manually there would be work for all rural women for 50 days of the year. In Java, rice handpounding was an important source of cash and food to the poorest women. However cheap women's labour was the new mechanized methods are more profitable to rice producers - although cheap credit and favourable exchange rates to purchasers of the equipment may not make them cheaper to the country as a whole. Private profits of the better-off have been at the cost of inequalities in rural income and food distribution.

Modern methods of rice production affect local distribution of food in other ways. The larger crop has brought with it larger-scale warehousing and trading which have made inroads into women's small-scale

storage and marketing practices. Women used to sell their own handpounded rice or buy handpounded rice from other women to sell wholesale or direct to consumers. Again on a purely aggregate accounting basis modern innovations might be cheaper but in the process rural income and employment multipliers of the greater rice production are weakened. Further migration to urban areas is encouraged. This modern means of extracting rural "surpluses" may well be self-defeating.

The growth of women's volume of trade over their life cycle is an indication of the profitability to them of small-scale trading. How much more profitable would it be, and how much derived demand for staple and secondary food production could be created were cheaper credit made available to them? At present women may prefer to take more expensive free market credit because it offers flexible repayment schedules and does not require letters of reference. A new branch of banking expertise seems relevant. Supplementing the capital of women's credit associations could lead to very high marginal returns because this would expand a going concern. Women food traders attending a seminar in West Africa pointed out that credit facilities to them would enable them to extend their production loans to food producers (FAO - 1977). They also suggested better rural market facilities (more shelter, proper sanitation, more space and child care facilities), and help in appropriate technology for processing and preserving foods using a local female labour force. Better market infrastructure would bring more goods and more women into the location of market exchange. Producing non-perishable products would widen effective market demand. These kinds of policies require a change in attitude from extracting agricultural surpluses at the farm gate to seeing linkages between rural and national food self-sufficiency (or between high rural employment and income multipliers and the supply of food surpluses to urban areas).

##### 5. RAISING FOOD PRODUCER PRICES

A new policy of raising food producer prices is being urged on governments to offer farmers more incentives. Are farmers expected to put more of their holdings under grains, or work their present grain fields more intensively? Either way, what will be the effect on farming household food self-sufficiency *via* what happens to women's labour allocation and powers of appropriating the produce? In Mali there has

been no visible increase in food production since procurement prices were raised in 1981. It has been said that this is because most of the output passed through the free market before anyway (OXFAM - 1984). But it could also be because household production is price inelastic.

## 6. A FEW WORDS ON POPULATION AND HEALTH

To the extent that agricultural strategies have weakened farming and/or landless households' food self-sufficiency, migration to urban areas will continue, food imports will rise, and more arbitrary methods of extracting food from rural areas will be devised. We have seen that a weakened role for women in food chains can contribute to this.

Food self-sufficiency is about *per capita* food availability. Therefore population size is an input of any food strategy. Where agricultural modernization has increased the workload of women, the need for children's labour assistance must be greater. The utility of large numbers of children therefore remains high. Production intensification usually raises seasonal peaks of demand for women's labour. There is now concern about premature reduction or termination of breast-feeding, pregnant women losing weight in some months, seasonal variation in birthweights and infant mortality. There may also be a divorce between agriculture and farming household nutrition in some areas. It is not fanciful to suggest that infant and maternal health has been jeopardized by agricultural strategies. If a decline in infant mortality is one determinant of fertility decline, then there may be a trade-off between agricultural strategies and demographic hopes. Demographers suggest that when *per capita* income rises above a certain threshold families find the utility of children declines (labour assistance, old age security, etc) while their costs rise (education). A decision is taken to limit fertility. But agricultural strategies have raised the utility of children to women and can actually reduce *per capita* income available to them while increasing *per capita* income available to men. So whose incentives to limit fertility are we talking about ?

## 7. AREAS OF RESEARCH

1. The respective potentials of women's food fields in Africa and of household food plots in Asia. Is the modeled household food plot in Africa an albatross round women's necks or a minimum guarantee of their food autonomy ?



2. What has been the effect of grain production intensification in terms of women's economic opportunity costs and farming household food supplies - under different land systems ?
3. The effects of current resettlement schemes on farming household food self-sufficiency through the misallocation of land resources and women's foregone opportunities. Alternative designs for these schemes.
4. Have agricultural strategies had a deleterious effect on maternal and child health and included a pro-natal element ? If yes, why ? And how can this be corrected ?
5. The effect of raising grain producer prices on women's roles in the farming household economy and on the household's food self-sufficiency.
6. What are the linkages between food self-sufficiency at the levels of the farming household, rural areas, and the country that are influenced by women's roles in food chains (production, processing and distribution) ? What contribution could women make to enhance these linkages and expand food supplies at all levels if relations of production and exchange were different ? What are realistic options for those relations ?
7. Appropriate credit schemes linking women producers, processors and traders of food.
8. Improvements in the infrastructure of rural food markets.
9. Appropriate technology in local processing and preservation of foods using women's labour and entrepreneurial skills.
10. The role of food aid :
  - direct to mothers on settlement schemes
  - in advancing 7, 8 and 9.
11. Take some past or on-going EEC government-supported food agricultural projects and analyse them according to :
  - their identification of the problem to be solved
  - their assumptions (if any) about the structure of the farming household economy
  - appropriateness and adequacy of baseline data used
  - appropriateness of the project design to meet :
    - . stated objectives
    - . other relevant objectives missed
  - examine actual outcome against intended outcome

- explain, as far as possible, differences between actual and intended outcomes
- examine likely/actual outcomes for health and population
- pose options for alternative objectives and designs.

## REFERENCES

- ACHARYA, M. and BENNETT, L. (1981). *Rural Women of Nepal, An Aggregate Analysis and Summary of Eight Village Studies*, in "The Status of Women in Nepal, Vol. II : Field Studies", Centre for Economic Development and Administration, Tribhuvan University, Kathmandu.
- CONTI, A. (1979). "Capitalist Organization of Production Through Non-capitalist Relations : Women's Roles in a Pilot Settlement Scheme in Upper Volta", *Review of African Political Economy* : 15-16.
- DEY, J. (1980). *Women and Rice in the Gambia : The Impact of Irrigated Rice Development Projects on the Farming System*. Ph.D. University of Reading.
- FAO (1977). *Market Women in West Africa*. Report of the Seminar on the Role of Women in Marketing Local Farm and Marine Produce, Roma.
- GUYER, J. (1977). *The Women's Farming System : The Lekie, Southern Cameroon*, ENSA. Yaoundé.
- HANGER, J. and MORIS, H. (1973). "Women and the Household Economy", in R. Chambers and J. Moris (eds.), *MWEA : An Irrigated Rice Settlement in Kenya*. Welforum Verlag. Munich.
- HARRISS, B. (1978). *Postharvest Rice Processing Systems in Rural Bangladesh : Technology, Economics and Employment*. Bangladesh Agricultural Research Council. Dacca.
- JACKSON, C. (1984). *The Kano River Irrigation Project : The Impact on Women and their Households*. Population Council, New York.
- LONGHURST, R. (1980). *Work, Nutrition and Child Malnutrition in a Northern Nigerian Village*. Ph.D. University of Sussex.
- LUND, R. (1978). *A Survey on Women's Working and Living Conditions in a Mahaweli Settlement Area with Special Reference to Household Budgets and Household Surplus*. Study Paper. People's Bank. Colombo.
- OXFAM (1984). *Behind the Weather : Why the Poor Suffer Most (Drought and the Sahel)*. Oxford.

- PALMER, I. *et al.* (1983). *The Northeast Rainfed Agricultural Development Project in Thailand : A Baseline Survey of Women's Roles and Household Resource Allocation for a Farming Systems Approach*. Population Council, New York.
- SAJOGYO, P. *et al.* (1980). *The Role of Women in Different Perspectives, West Java*. Project on "Rural Household Economics and the Role of Women". Bogor. Indonesia.
- SHARMA, J.S. (1975). "Nainital and Varanasi, Uttar Pradesh, India", in *Changes in Rice Farming in Selected Areas of Asia*. IRRI, Los Banos. The Philippines.
- SIMMONS, E. B. (1976). *Economic Research on Women in Rural Development in Northern Nigeria*. Overseas Liaison Committee. Paper n° 10. American Council on Education. Washington.
- STOLER, A. (1977). "Rice Harvesting in Kali Loro : A Study of Class and Labor in Rural Java". *American Ethnologist* 4(4).

## ABSTRACT

Past concentration on food staples have led to distortions and waste in the allocation of land and labour. In Africa women have been obliged to work more on these increasingly marketed foods, and their secondary food production has been threatened. In parts of Asia modernized production has led to redundancy of landless women. Neglect of secondary foods has meant lost opportunities for women's cash income and for an important food supply to urban areas. There is an urgent need to rethink land use patterns, processing and marketing arrangements, and women's incentives to collaborate with planners, especially on settlement schemes.

## RÉSUMÉ

La priorité accordée précédemment aux aliments de base a entraîné des distorsions dans la répartition des terres et du travail ainsi qu'un certain gaspillage. En Afrique, les femmes se sont vues contraintes à travailler davantage à la production des cultures d'exportation, d'où une mise en péril de leurs productions d'aliments secondaires. Dans certaines parties de l'Asie, la modernisation de la production a privé de travail les femmes sans terres. Le désintérêt à l'égard des produits secondaires a fait perdre aux femmes bien des possibilités de revenus, et aux villes une source importante de produits alimentaires. Il est urgent de revoir les modèles d'utilisation des terres, les mesures prises à la transformation et à la commercialisation, ainsi que les motivations des femmes à collaborer avec les planificateurs, tout particulièrement dans les projets de colonisation.