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AGRICULTURAL DEVELOPMENT SYSTEMS EGYPT PROJECT

UNIVERSITY OF CALIFORNIA, DAVIS

SEMINAR ON FOOD CONSUMPTION AND ECONOMIC DEVELOPMENT IN RURAL COMMUNITIES

by

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WORKING PAPER

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Agricultural Development Systems: Egypt Project University of California Davis, Ca 95616

Food <u>Consumption and Economic Development in</u> <u>Rural Communities</u>

In Egypt, for various reasons, agricultural performance has failed to keep pace with growing food requirements. We are gradually losing our capacity to feed ourselves with our own products. The shortage in the supply of food, given planned priorities, may be one of the most important bottlenecks restricting economic development and its alleviation should be given a top priority in our development programs.

The problem of malnutrition is basically an economic problem, because when people are poor, their level of nutrition is generally low. The diseases resulting from malnutrition reduce the quality and size of the labor force, which in turn contributes to poverty. This means that the level of nutrition has important effects on labor productivity.

In order to explain the influence of employment and labor productivity on the rate of growth of national income, we employ the following model.

Therefore, the rate of growth of N.I. is equal to the rate of growth of labor productivity plus the rate of growth in the number of employees.

This implies the rate of growth of N.I. per capita is largely determined by the rate of growth of labor productivity which is affected to a great extent by the improvement in the nutritional level in developing countries.

On the other hand, food consumption has a major effect on the final utilization of N.I. especially in developing countries. Foreign trade is usually used to change the material structure of N.I. produced in order to conform to the needs of the population. This is effected by importing goods which are not domestically produced (or insufficient for the domestic requirements) and exporting commodities which exceed population needs. Thus, foreign trade either increases or decreases the amount of N.I. left for final distribution as follows:

If exports are > imports, the N.I. produced is > the amount distributed. The country's stock of foreign currency will increase and in turn, its ability to import capital goods (needed for the socio-economic development process) will increase.

If imports are > exports, the N.I. produced is < the amount distributed. Therefore, the country's stock of foreign currency will decrease and in turn, its ability to import investment goods will be reduced and result in a delay in socio-economic programs.

The following diagram illustrates the allocation of the N.I. The level and proportion of each category depends on many factors such as the state of development, the rate of growth of N.I. required, <u>et al</u>.

If the ratio of national income allocated to consumption increases, the ratio of N.I. allocated to accumulation (saving) will decrease and vice versa.

In the developing countries, particularly, the poorest countries, food consumption represents a high percentage of total consumption.

Therefore, food consumption policy must be regarded as an integral part of general economic policy.

The World Food Council (1974) stated that food crises are the most dangerous crises human-beings have to face nowadays. These crises may lead



to several political and social crises and may result in regional wars fought in order to control the food resources of the world.

A related question is:

What is the concept of food security?

Some economists have considered this to be a political concept, others have tried to propound a concrete definition for food security, and delineate its different implications for different social and economic systems. In my opinion - and many other economists may share this opinion - Food Security as a national goal has only one unified definition. Differences between different countries only concern methods and means of achieving this goal but not the concept itself.

Food security means supplying the different social and economic classes in the society with their basic requirements for food (both in quantity and quality) so that they may achieve their full physical and mental potentialities at the time of their choosing, in the place where they live, and at prices they can afford.

On the other hand, there are different strategies and policies to achieve this important national target (food security). The tools used under each policy may differ from one country to another according to each one's natural and economic resources. The tools may also differ within one country, from time to time, as changes take place in economic and demographic conditions in the various regions because of changes in the productive capacities, transportation and storage facilities, consumption patterns, food habits, ... etc.

The activity goals are to identify the most effective agricultural and nutritional intervention programs in order to improve the nutritional status of the poorer classes in the Egyptian rural areas (holding five or fewer feddans of land).

The investigation of this problem requires the development of methodologies for evaluating the effectiveness of different (or several) agricultural and nutritional programs at the level of the farm household.

Food policies (for peasant households) have to be evaluated by estimating their direct and indirect nutritional effects. The direct effects operate

through increasing the quantity or improving the quality of food consumption, while the indirect effects operate through their changing levels of farm production and income.

For example, the programs which increase labor supply (quantity or quality) may increase farm production and thus have indirect effects on nutritional status.

The programs which increase farm output such as credit programs, input subsidies and or price policies for the crops certainly have an effect on incomes and in turn on nutritional level and will be considered.

It is worth mentioning at this point that agricultural price policy influences both production and consumption. The general price level of agricultural products has an important effect on the degree of intensification of agriculture. It determines the magnitude of the real income of the agrarian population and the level of both consumption and accumulation. The rate of accumulation affects the rate of private investments in the agricultural sector. The assumption that the farmers will themselves regulate the range and direction of investment in a satisfactory way may be incorrect. At the same time, the view that the state should garner the total surplus value of agricultural products and centralize all investment may likewise be incorrect.

The effectiveness of programs that directly influence nutritional status such as food subsidies, nutritional education programs . . . etc., will be appraised.

In view of these considerations, the investigators in this study, plan to conduct a survey of peasant households, identifying and investigating ramifications of socio-economic characteristics and farmers' and other

household members' attitudes and behavior which determines both the actual intakes and requirements for different food items, the prevailing nutritional status of the surveyed population and the nature and extent of nutritional deficiencies.

The functioning of the poor Egyptian farm household will be specified as completely as possible.

The outcome from this activity may be useful in the formulation of price policy and the modification of social institutions affecting agriculture.

Methodology of the Study

The study has been designed to have three stages:

The first stage will encompass the selection of a representative sample of Egyptian rural households. This will be a multi-stage stratified random sample. Although, for the policy purposes, the activity will emphasize small farmers (poorer classes), information about all holding classes will be necessary for explanatory purposes and in order to supply information to other activities.

The small farmers have been defined for purposes of our survey as those who hold five feddans of land or less. We consider the holder as the sampling unit in our survey (within the selected village) and the holding area as the productive unit. The holding area (include all parcels of land) may be totally owned or rented or partially owned and rented.

The sample for the farm management survey (56 villages) was used as a general frame for our present sample. This was done in order to benefit from available basic information and to collect data which was vitally necessary for the selection of our villages according to their relative weights.

The 56 villages in the frame were reclassified into five agronomic zones (according to the relative weights for major crops) taking into consideration (to a great extent) their geographical distribution.

Both the farm management survey information and Egyptian major constraints were used as guidelines for our classifications.

The five zones into which the villages were classified are as follows: The first zone includes the villages located in the North delta governorates (14 villages). The main agrarian characteristic of this zone is the relatively high percentage of rice area which represents 27 percent of the cropped area and 50 percent of the total cultivated area.

The second zone includes the villages located in the Middle delta governorates (14 villages). The main characteristic of this zone is its adherence to traditional crops which vary in relative importance from year to year. There is no one extensive crop in this region.

The third zone includes the villages located in the Southern part of delta and the Northern part of Middle Egypt (villages around Greater Cairo--11 villages). This zone is characterized by the relatively high percentage of land devoted to fruits and vegetables. The area devoted to fruit (mainly citrus) represents about 13 percent of the total holding area. The vegetable area represents about 27 percent of the cropped area and 50 percent of the total cultivated area.

The fourth zone includes the villages located in Middle Egypt (seven villages). Their agriculture is also characterized by traditional crops like that of the second zone, the Middle delta.

The fifth zone includes the villages located in Upper Egypt (10 villages) which grow a relatively high percentage of sugar cane which occupies about 23 percent of the total holding area.

From the five described zones, ten villages were randomly selected as a representative sample. The relative weight of the poorer classes (holding five or fewer feddans) was the indicator which defined the number of villages selected in each zone. The selected villages were distributed as follows:

Zone I four villages - Zone II two villages - Zone III two villages -Zone IV one village and Zone V one village.

Some basic information, such as cropping structure, holding structure and existing infrastructure, has been collected from those ten villages.

The sample will include 250 observations. The total number of holders, and their distribution into the different holding classes, will be the major determinants of the number of observations in each village. Particular emphasis will be given to those poorer classes who hold five and fewer feddans. The minimum number of observations in each village will be 15 sampling units.

The second stage will comprise the collecting of data on the following subjects:

- Nutritional and health status (including some authropomorphic measurements)
- Food consumption, food eaten, purchased and produced
- Demographic characteristics and family structure, family labor and hired labor (on and off the farm)
- Holding structure and tenure system

- Production (quantity and value) and its allocation to: family consumption (human and animal); the market for sale (different markets); further production
- Farm household assets (including average price of land)
- Inputs and costs
- \mathcal{I} Income (gross and net) including incomes from other activities
 - Risk and uncertainty
 - Access to credit, inputs and technical assistance
 - Institutional constraints, policies and programs

These data will be gathered during 1981, by means of different questionnaires to be administered at the farm household level. Data will be tabulated. Some additional information needed to complete and check information from the farm household questionnaire will be collected at the village level.

Directors of the cooperative societies, the village bank, members of village council and agricultural supervisors, will be interviewed to collect the following data:

- Average price of agricultural land and its rental value vs. official and free market values.
- Prices of different inputs received from the formal and informal sectors.
- Farm gate prices for the principle crops grown in the village available from different marketing channels.
- Land allotment rules for the agricultural year 1981/1982.
- Input deliveries supplied by the coops and other suppliers.
- Resale of inputs and or subsidized commodities.

- Credit facilities, their costs, terms and sufficiency.

- Subsidized commodities.

- Landless workers, number of families, income . . . etc.

The data will be collected by ten qualified interviewers (one for each village) using the designed and pre-tested questionnaires during several visits (5-6), in order to include different seasons and days.

The third stage: A theoretical model of the poor farm household as an economic decision unit has already been constructed.

This model specifies both production and consumption activities undertaken by the holder in order to maintain family life, growth and production on and off the farm.

The concept underlying the model was explained by Dr. Benito during his seminar on the 24th of March in 1981 and the model itself is contained in the Food Consumption Activity proposal.

It is worth mentioning the fact that this model may need some modification to adapt it to our specific economic and social conditions in the agricultural sector.

The model will be validated by comparing its empirical solution with observed patterns.

Data Processing

1. Manual Tabulation

A file system to keep the information for each farm--household will be organized. At the same time, a file system for each village, zone and the total sample has already been prepared. After each visit, one of the subquestionnaires will be completed, and the data checked and transformed into appropriate units of measurement. This data will be manually tabulated. Economic analysis will be undertaken and results will be edited.

2. Storing of data into computer tapes.

The American counterparts at the University of California will be responsible for writing a computer program to store the manually tabulated data and the additional information gathered onto magnetic tapes. Some information will be available for computer analysis even before the end of the agricultural year. Our office in the Ministry of Agriculture will be provided with a copy of the tapes and the analysis.

During the research period, preparation of a series of background papers related to our consumption activity will be a joint effort of both the American and Egyptian teams. Such papers will be used in the cost-effectiveness analysis of our project.

3. Literature survey

Although this topic comes at the last part of this seminar, the literature survey started at the very beginning of our activity and is still ongoing.

This survey will be one of our main targets during the coming period, as it was during the last, in order to permit selection of the most interesting references and data related to our study. A complete survey of the secondary data was conducted at different libraries in Egypt and the United States. The annotated bibliography for all references related to the project found in the United States has been compiled.

Some 50 selected studies in the field of nutritional studies and food economics were reviewed in Egypt. The basic information was abstracted and the required numerical data has been tabulated. We believe that in order to 12

develop and update bibliographies the exchange and distribution of different lists of sources collected under different activities may be of some help.

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