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Development Policy and the Disadvantaged, Subsistence Sector of Agriculture

There is an effort currently underway in development work to increase the level of assistance that is tendered to the disadvantaged poor in Third World countries. To this end, a variety of programs and policies are being formulated to help raise productivity and living standards. It is the purpose of this paper to briefly examine some of the problems facing the poor, subsistence sector of agriculture and to offer suggestions from which policy alternatives and directives might be derived.

Extant literature and statistics commonly differentiate between commercial and subsistence farming. In referring to the latter, three general categories can be fairly easily discerned. At the upper end of the income scale are the semi-commercial (or semi-subsistence) farmers, whose potential for modernization is good, given sufficient government and private sector support in the form of technical training, capital, infrastructural aid and low cost inputs. These people have been helped, at least in part, by previous as well as current development programs and projects. At the lower end of the spectrum are primitives, such as those in the Amazon Basin, who eke out an almost purely subsistence type of livelihood; these people are often truly isolated and are comparatively few in number. The population referred to in this paper lies between these two ends of the subsistence agriculture scale.

These people in the middle category produce essentially for home consumption, although they do sell goods off the farm in order to buy necessities. They are not, however, fully integrated into the market economy. This group as a whole is largely inaccessible physically, socially, and economically and has been only marginally affected by modern scientific and technological innovation. The people involved have below average incomes, are malnourished and inadequately educated; and their fertility, mortality, and morbidity rates are high. They are the major source of urban migrants but have few salable skills. They may own small, fragmented holdings, they may be landless peasants, or they may be sharecroppers or renters working under adverse tenure conditions. Their output is not usually accurately reflected in the GDP or other measures of economic

activity. The proportion of such people living below poverty ranges from 65 to 75 percent of the rural population in Honduras, Brazil, and Peru to 50 percent in Mexico and Colombia and to 20 percent in Argentina and Uruguay. Their attitudes toward higher agricultural productivity, cooperation with outsiders, family planning, or acceptance of innovation are not well known, except perhaps in a few small areas where detailed studies have been made. In this paper we will refer to this target population and its economic component as the disadvantaged, subsistence sector (DSS) of agriculture.

It was said of Mohammed Ali Jinnah, the first President of Pakistan and a leading negotiator in the division of the British Raj, that he could come up with a problem for every solution. It is not the intention of this paper to follow suit; however, a listing of problems is, at the very least, essential if a realistic development policy is to be formulated. Accordingly, a number of subjects are discussed that highlight both the problems of this sector and the difficulties that developers encounter in attempting to improve its socioeconomic status.

Data Base

Latin American statistics are often made available by administrative area or national totals, making it difficult for the data user to disaggregate the figures and extract the desired information for microgeographic areas or regions. The tendency for researchers and administrators is to accept the data as provided, since there usually seems to be no feasible way to obtain the figures for specially defined areas without a major expenditure of time and capital. Yet, in order to formulate meaningful policies and programs, some effort will have to be made to gather statistics with the DSS in mind. It may perhaps be possible to use sampling techniques to obtain the information, even though the universe has not been completely surveyed and non-sampling responses are not particularly reliable. Researchers and policy makers must have the following types of information on the DSS: size, characteristics, location, and composition of the target population; tenure types; size, ownership, and location of holding; DSS production, energy consumption, inputs, and available services. Given the improbability of readily obtaining part or all of this information, data users will have to be prepared to estimate, interpolate, extrapolate, guesstimate; and improvise. Whatever the method used, it must be emphasized that it is misleading to accept totals that not only include the DDS but commercial and semi-commercial operations as well.

Access

Access to the marketplace is a *sine qua non* of a commercial agricultural operation. The DSS cannot function effectively if it is isolated as a result of a lack of transport, an economic inability to use it, or an inadequate transportation network. A People's Republic of China study made some years ago suggested that one out of every two communes could not be reached by truck; the commercial implications of this estimate, if accurate, are staggering. Similar studies must be made for the DSS in Latin America, but it can be assumed that rural destitution and poor accessibility are symbolically linked and are commonly key components of the DSS poverty syndrome. Since infrastructural costs can be very high, indeed, the paucity of good roads in most parts of Latin America suggests that the development of DSS areas should be spatially restricted in most cases to places that are fairly easily reached. In this regard, *ceteris paribus*, high priorities might also be assigned to places in which both the commercial sector and the DSS are located, since the former are generally located in accessible areas.

Access also plays an important role in frontier development. As long as a high density, integrated, and durable farm to market road system is missing and as long as trade is conditioned by a few solitary and tenuous connections with the *ecumene*, one can anticipate that isolation will continue to influence pejoratively the sociopolitical and economic life of a frontier region. Furthermore, the construction costs of a road system in frontier areas are even higher than in the *ecumene*. In addition to elevated costs, capital is limited; Peruvian President Belaúnde Terry, under whose regime the Marginal Highway project was started, is fond of pointing out that the United States has, in many cases, twenty times as much money per capita to spend on government operations as do many Latin American countries. Finally, if frontier areas are opened up by construction of a few major roads, as in Amazonia, without a matching commitment in terms of supports, inputs, and services, the development runs the risk of simply spreading the rural slum.

Land Reform

Agrarian reform in Latin America has generally been less a coordinated program of development than an intoxicating mystique that is dangled, for its propaganda value, before an entranced and eventually disillusioned and distrustful peasantry.

Aside from the political factor, one of the reasons for this focus on reform is the simplistic yet misleading assumption held by many leaders that agricultural development need only be linked to land ownership and that land redistribution is somehow the philosopher's stone that can solve all the problems of the DSS. This is not so. To be successful, 'agrarian reform must concern itself with a variety of factors. First, development must be holistic and take infrastructure, services, inputs, and energy into consideration. Second, land of acceptable quality must be available for apportionment. This is not the case in some countries such as Mexico, where there is comparatively high grade unused land left and where equitable division of holdings appears to be an ineffective and chimeric goal. Third, the size of a viable holding, in physical and economic terms, should be determined on a regional basis. Unfortunately, this runs the political risk of having the criteria tampered with by wealthy, landed members of the agricultural establishment. Nevertheless, it should be added that the DSS is not without any political power whatsoever. Laughlin Currie, the American economist, once suggested that the Colombian government concentrate only on production from the large, efficient holdings in the country and completely neglect the *minifundia*, since they were not worth any investment on a cost benefit basis. This position was viewed by the authorities as being completely unacceptable politically. Fourth, the conditions of tenure must be closely monitored and controlled. Often it is the terms of the tenancy that are deleterious rather than the lack of land ownership per se by the farm operator. One need not agree completely with Theodore Schultz and others in this regard to be aware that one can find farm tenants who are prosperous and effective operators and who are motivated to care for their holdings because it is to their benefit to do so. In any event, it may be observed that land reform is often the most critical element in agricultural development in cases where farming is the dominant activity if few technological advances are available for widespread use and if the area in question is poverty stricken and inaccessible. It is for these very reasons that the DSS population views agrarian reform in such a desirable light.

Inputs and Services

The DSS is normally short on inputs and services that can be used to support commercial agricultural ventures. Supplies, information, and fairly advanced technology are unknown or unavailable; in addition, farmers generally lack the skills to efficiently maximize their use without training and other aids. In varying amounts, the DSS has need of the following: fertilizers, seeds, insecticides,

herbicides, physical and cultural energy, machinery, road systems, transport, storage and handling facilities, cooperatives, credit, and extension services. A very important and valuable form of assistance can be supplied by the extension service. Yet in Latin America, this service is understaffed and poorly trained. This is because students prefer to study what they perceive to be somewhat more exciting or lucrative subjects and because it is often considered socially demeaning to work in the field and mix with peasants except on a strictly *patron-campesino* basis. In Paraguay, agricultural agents went on strike a few years ago simply because their government vehicles were taken away from them and they were directed to go out in the field on horseback. The social gap between the DSS and the establishment is indeed substantial.

Trickle Down and Bubble Up

Much of the aid funneled through the development process has not trickled down to the DSS. This is doubtless due less to the inefficiency, avarice, or disinterest of the administrative structure involved than to the higher priorities assigned to non-agricultural and commercial (and semi-commercial) agricultural projects and programs. The possibilities of raising production and obtaining a profitable return on an investment in these latter sectors is better than that on the DSS.

Perhaps one effective way to get local work done is to solicit autochthonous, grass roots participation -- in other words, to use the "bubble up" or self-help approach. Gandhi placed great stress on "cooperative self-reliance," as has the People's Republic of China. While the results have not always been satisfactory, some efforts have proven most salutary. The DSS populations in China and India have been called upon to build and maintain roads, dig irrigation canals and drainage ditches, construct housing, reforest areas, operate cooperatives, and aid in the storage and handling of produce.

In keeping with this theme, it would be desirable to determine whether DSS farmers wish to commercialize their operations if the opportunity arises. What are their true motivations? Is a primary motive the diversification of operations to decrease risk? If the campesino were given a new, truly miracle seed that could double his output, would he want to cut his acreage in half? In this regard Gunnar Myrdal, the Swedish economist, maintains that the attitudes and work habits of the DSS must be changed in order to transform it into a commercially

oriented sector. It appears as though much research on a microgeographic basis must be undertaken try to ascertain the general parameters of DSS thin kings and motivations.

Finally, the question of technology transfer lends itself to a discussion of the "trickle down" and "bubble up" approaches. Understanding the new tools and techniques requires training by persons skilled in these matters, but the milieu of the DSS must also be closely studied to see how innovations can be introduced and accepted. As Ester Boserup suggests, simple technologies that can be easily and beneficially applied in the DSS are not likely to be rejected.

Markets

Even a partial transformation of the DSS into a more commercially oriented sector requires a knowledge of potential markets, in terms of type, size, and quality of demand. Which products are particularly salable? What kinds of quality control are needed? How can transportation and storage and handling be efficiently organized and operated? Clearly, detailed market studies would be helpful, but funds for such surveys are not always available. Another question revolves around the DSS relationship to both rural and urban areas. Is there a potential for the DSS relationship to help feed the burgeoning urban populations? What are the needs of village or rural populations? It is claimed that domestic requirements in Latin America account for 80 percent of the total demand for agricultural products; this figure hardly reflects the potential demand of the DSS if its purchasing power were enhanced. In Northeast Brazil, for example, almost two-thirds of the population currently exists on a nutritionally deficient diet. In Mexico, the country has moved from a position of wheat self-sufficiency that was maintained from 1956-1972 to one of dependence on imports; in 1978-79, 3.1 million tons were imported. The figure would surely be larger if total DSS demands would also be filled.

Labor

The DSS suffers from an overabundance of unskilled labor and capital intensive commercial agriculture has little place for these laborers. Accordingly, much of this work force is underemployed or unemployed for a major part of the year. Yet some DSS areas may actually experience labor shortages for short periods in the agricultural cycle, suggesting that more research needs to be done on work calendars and underemployment cycles for this sector.

Almost half of the total natural increase in the agricultural population of Latin America from 1950 to 1975 has ended up in urban areas. However, even if migration siphons off a sizable portion of this population, the change of venue hardly solves the problem. The mass movement does suggest, however, that the urban problems posed by in-migration cannot be dealt with in isolation; rather, situations in rural as well as urban areas must also be addressed simultaneously.

Ecological Considerations

Most of the DSS areas suffer from environmental mismanagement. Overgrazing, harmful slash and burn techniques, pollution, accelerated erosion, and forest destruction are common problems. Ecologists express alarm both at the pace and the extent of the environmental damage involved. The major parts of Haiti and El Salvador with large DSS populations, for example, suffer from the effects of widespread erosion; the levels of air pollution over the llanos are at times higher than they are over some urban areas. The examples of DSS mismanagement are extensive, yet governments have, by and large, done little to ameliorate conditions. Information on many DSS areas is poor and often little interest is shown in them by national planning agencies. The feeling is that because the DSS is poverty stricken, ecological factors must be subordinated to those economic imperatives directed at raising living standards. This view is not counterproductive, since economic conditions and environmental conditions are not considered to be significantly interactive.

Research

The goal of CATIE (the Tropical Agricultural Research and Training Center in Costa Rica) is to develop a technology applicable to small farmers; since 1960, the organization has been moderately successful in Costa Rica in shifting small holders from long fallow and short fallow and in introducing or expanding the cultivation of certain commercial crops. The result is that four times the amount of farm labor previously used is now gainfully employed in some project areas. Yet, on balance, agricultural research in Latin America has tended to focus on innovation and improvements in which only the commercial and semi-commercial sectors can benefit. Consider, for example, the relevance to the DSS of the following research which is currently ongoing in the developed world: photosynthesis enhancement (formation of plant carbohydrates through exposure to light); greenhouse agriculture; use of bioregulators (compounds

which produce ripening or which can prolong shelf life); beef twinning; new water and fertilizer uses; reduced tillage; crop pest control strategies; new and improved hybrids; antitranspirants; enhancement of plant tolerances to drought and salinity; bioprocessing (conversion of unpalatable products to feed). Consider also the Green Revolution experience, with the use of HYV or "miracle" strains of rice and wheat, in which commercial farmers, rather than the DSS, benefited. How many of the research projects just noted are aimed specifically at the improvement of DSS conditions? Even if the findings of government sponsored research are presumably available to all farmers, it does not necessarily mean that all farmers have the ways and means to take advantage of them. Much more time, effort, and capital needs to be invested if research for the DSS is, literally, to bear fruit. Opponents of this position, it should be noted, suggest that research benefitting commercial agriculture will raise productivity in that sector far more than it will in the DSS. This may be so. Yet such a position highlights the dilemma; increased output of the commercial sector seldom aides the DSS to any great degree.

Concluding Remarks

Given the aforementioned problems facing both the DSS and those agencies engaged in development work, what can be done? What options are open to decision makers in altering the status of the DSS? Some matters to consider in this regard are briefly described below:

1) Development needs to be holistic. (In this regard, other similar terms also suggest themselves, such as integrated, comprehensive, coordinated, synergistic and Gestalt). The Rockefeller brothers' report on Mexico some four decades ago made this point, as have a number of applied geographers. In other words, land reapportionment by itself is not enough; nor are such other improvements as new roads or miracle strains of some crop or fertilizer likely to benefit the DSS if used in a singly focused type of effort.

A word of caution should be injected at this point. If highly sophisticated, complex and far reaching plans are made within a LDC administrative environment, the program may conceivably falter or even collapse. This is due to the fact that different ministries, organizations, or institutions may choose to select or reject parts of projects in an eclectic manner, thus vitiating the value of overall planning. This is a common enough occurrence and suggests that fairly

small projects, integrated into a regional context, may be more successful than large, grandiose plans. It does not infer, however that segmented planning is superior to a comprehensive or synergistic approach.

2) Since the DSS suffers from excessively large numbers of people, the population growth rate must be eased. Norman Borlaug refers to this problem as the "Population Monster." Again, however, it is improbable that a single issue solution can be very effective. Instead, family planning, urban migration, development of cottage industries, practical training for farmers, pragmatically oriented education for youngsters, farm improvements, and grass roots participation must all be considered simultaneously.

Insofar as family planning itself is concerned, a major effort must be made to bring training and centers into rural areas; the focus currently is in cities, due to the limitations imposed by personnel, capital, and accessibility. In this regard, a "barefoot doctor" approach may prove to be appropriate and helpful. Java, for example, has lowered its fertility in rural areas by this means. In addition, research needs to be carried forward on work calendars and time-use and on the contributions of women and children in the agricultural work cycle; such information could prove useful in devising more efficient and useful means of employing farm labor and would have a bearing on the pronatalist or antinatalist attitudes of the population.

3) DSS development planning should restrict its scope and objectives and establish priorities for its programs. This is necessary because the DSS is far too large in Latin America and the poverty syndrome too well entrenched for substantial change to take place quickly. Complete socioeconomic transformation of the DSS should therefore be viewed only as a possible long term goal. Care must also be taken not to consider programs solely in terms of cost benefit alternatives, since DSS projects may not be particularly cost effective when compared with the returns on investments of effort and capital in other sectors of agriculture. Aid to the DSS must be viewed, in other words, from a humanitarian perspective. Fourth world countries may, due to impecunious circumstances, wish to turn over to international agencies the entire task of aid to the poor; every effort should be made by the development community to see that such governments are not allowed to opt out entirely from problems that must be viewed primarily as their responsibility.

4) Autochthonous, community participation in projects should be viewed as an important component of a development program. Guidance and support from higher levels of authority, however, are desirable since most types of spontaneous agricultural development has not proven to be very effective.

5) An effort must be made to see that agriculture, particularly in the DSS, is not viewed in a disparaging manner. This presumably would entail, among other things, some sort of government sponsored public relations program to upgrade the image of agriculture. The educational systems in Latin America should also be required to review and perhaps attempt to change unfavorable attitudes toward agriculture now held by many urbanites and people in the upper and middle classes. More concretely, the socioeconomic status of agricultural extension agents assigned to the field must be upgraded, as is the case in some parts of Asia.

The late H. L. Mencken once observed that for every complicated problem there is a solution that is short, simple -- and wrong. One can only conclude that the Gordian Knot posed by the DSS is not going to be easily or quickly cut. Accordingly, agencies should select not only those policy alternatives that are beneficial and humanitarian but those that are also realistically limited in terms of scope and goals.