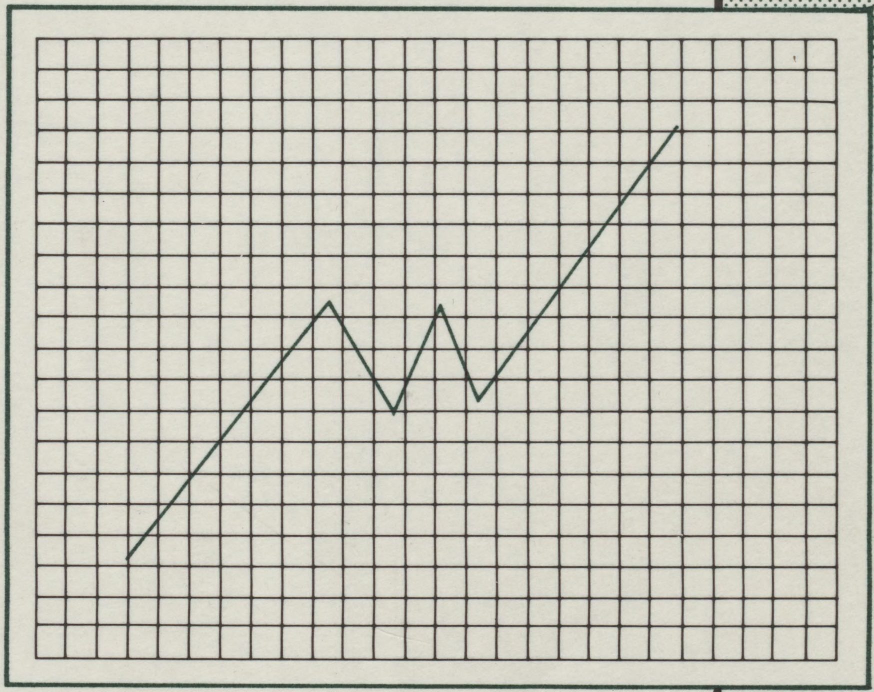

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CONCEPTS FOR FORMULATING MANAGEMENT APPROACHES IN A LESS DEVELOPED AGRICULTURAL ECONOMY*

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INTRODUCTION

The dualistic nature of the South African agricultural economy is well documented (Lipton, 1977; Cobbett, 1987; Van Rooyen *et al.*, 1987). Indeed, the economic disparity between white and black South Africa is most visible in the agricultural sector. The commercial farming sector is dominated by whites, whereas the subsistence sector consists mainly of black families subsisting on traditional communal holdings. Although each sector employs roughly the same number of people, the commercial sector covers about six times the land area of the subsistence sector (Cobbett, 1987), and the output per commercial worker is more than 20 times the output of a subsistence farmer (Van Rooyen *et al.*, 1987; Fényes *et al.*, 1988a).

The causes and consequences of this dualistic structure recently entered the arena of academic debate in an increasingly politically sensitive direction, as was reflected both in commission reports (Buthelezi Commission, 1982; Swart report, 1983; President's Council, 1985; KwaZulu - Natal Indaba, 1987) and in works by individual observers (Beinart & Bundy, 1980; Bundy, 1972, 1979, Cooper, 1979; Cross, 1981, 1985; De Wet, 1985; De Wet & McAllister, 1983; Nattrass, 1985; Van Rooyen *et al.*, 1987; Fényes *et al.*, 1988a etc.).

Depending on the ideological viewpoint, the question boils down to the basic alternatives of capitalist development with a high emphasis on productivity and conservation or centrally directed socialism with its egalitarian accent.

The purpose of this paper is to highlight some of the conceptual problems of management of agricultural and rural development in the less developed areas of South Africa. Some philosphical arguments underlying the role of the market in any future agricultural dispensation are presented. The paper goes on to discuss the inability of conventional neo-classical and Marxist economic theories to explain the traditional mode of production-consumption relationships in African farming, especially in connection with labour use, valuation of output and management of land resources. In the final section the paper briefly discusses the merits of farming systems research.

CAPITALIST VS SOCIALIST DEVELOPMENT

The underlying principle of capitalist development is the acceptance of market forces as the catalyst and facilitator of resource allocation and the emancipator of people from the yokes of the traditional community. This view has been held by great thinkers such as Montesquieu and Adam Smith and also by contemporaries such as Von Hayek and Milton Friedman.

Opposite to this is the 'evil-market' thesis, according to which traditional virtues are undermined by market forces based on self-interest and material greed. The capitalist market system is held to be demoralising and hence self-destructive.

A new version is the debate between the so-called 'moral-economy' and 'political economy' approaches to rural development. The former approach assumes that social relations in precapitalist communities are geared to securing minimum subsistence for all. The social interactions required to avoid subsistence crises have resulted in a 'subsistence ethic' as opposed to the 'Protestant ethic' identified by Max Weber and acquired through market exchange.

The political economy view (Popkin, 1979) states that all people prefer personal gain to group interest and even in traditional societies the market system is beneficial to a majority of peasants.

One common element of the opposing standpoints is that by and large they regard community and market as rival institutions in terms of both growth and equity. Hayami (1988) challenged this assertion and believes that the conditions of production and exchange faced by semi-subsistence peasants are such as to make the failure of market pervasive in achieving the efficient allocation of resources. This is especially true in internalising external factors through customary rules and moral principles rather than formal laws and explicit contracts.

On the other hand, detrimental aspects of customary rules include the fact that by nature they are slow to adapt to changing circumstances in technology or market conditions.

Furthermore, community mechanisms for rule enforcement are bound to be limited to smaller communities. And although commodity mechanisms may be effective in reducing transaction costs within a community, they do not guarantee efficient

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resource allocation in the Pareto-optimum sense. Finally, if a community is artificially separated from market competition, the likelihood is high that the community principles of mutual help and reciprocity may be transformed into a mechanism of mutual inefficiency. The future role of the market in a new agricultural dispensation in South Africa will depend mainly on political considerations. Nevertheless economics and politics are inseparable and therefore it is necessary to be able to supply the decision-makers with solid micro-level data on which foundation macro-economic policies can be built.

TRADITIONAL AGRICULTURE AND CONVENTIONAL MICRO-ECONOMIC THEORY

It is only in recent years that economists have begun to realise that the economic behaviour of the peasant farmer requires a theory which is quite different from the micro-economic theory found in standard Western textbooks. The fundamental factor that makes conventional theory unrealistic in analysing traditional agriculture is the assumed dichotomy between firms and consumers. In the African rural economy, in contrast, there is rarely any distinction in practice between the producing firm and the consuming household. In the orthodox theory of the firm, it is assumed that the entrepreneur buys his inputs and converts them into products using the factors of production, the products being sold in some form in the market. It is also assumed that the entrepreneur attempts to maximise profits and the consumer and the worker make their choices in an attempt to maximise utility. It is the assumption underlying these theories that is incorrect, to a greater or less extent, when dealing with the typical African smallholder. Unlike the commercial farmer he does not in general, or to any great extent, hire regular labour, he does not purchase much in the way of inputs of any sort. Unlike the consumer who works for a firm or receives rent, he does not have a given, regular income that he expects with a high degree of certainty. He is not obliged to put in a fixed amount of work in order to be employed at all. Rather, he makes his choice about the number of hours he will work and time he wants to devote to other activities, depending on the needs of his family. It is therefore more realistic to look upon the typical African smallholder as a sort of combination of household and firm. An early pioneer thinker in the field of the economics of smallholder farming was the Russian economist A.V. Chayanov. He took issue with some of the views of Marx and Lenin and stated that the smallholder farm is in a class of its own as an economic entity, the smallholder farmer being neither true capitalist nor true proletarian (Chayanov, 1925).

Mellor (1963) and Nakajima (1970) independently presented similar and original models of the peasant farm. These, perhaps along with that of Sen (1966), marked an important breakthrough in theory. Levi and Havinden (1982) followed their reasoning in explaining how the optimum combination of leisure and output is chosen by smallholders. Figure 1 is useful for the logical analysis of changes in the economic circumstances of the farm.

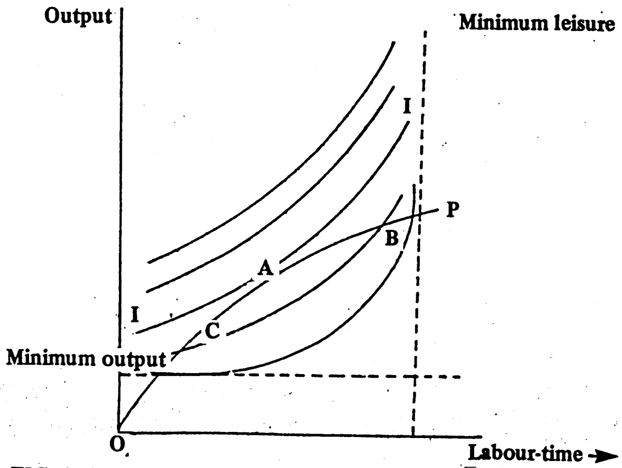

FIG. 1. Output and labour

Assume that the farm is a single decision-making unit and that time is divided between only two activities, labour and leisure, each of which is conveniently homogeneous and measured in time units.

The highest utility level attainable within the confines of production possiblity curve OP is that denoted by the indifference curve marked I, and the combination of leisure and output (or labour and output) chosen is at A, this being the only combination attainable on I. Any other point on OP, such as B or C, would be on a lower indifference curve.

This approach demonstrates clearly the difference between the economic behaviour of the peasant farmer and that of the commercial farmer or consumer. The precise location of A depends on the shape of the indifference map and on the position of the production possibility curve. One might suppose that the latter is the dominant influence when considering broadly the labour-output combinations for whole regions, rather than for individual farmers.

Consider the two diagrams in Figure 2, each of which compares a farmer possessing a small endowment of land with a farmer who has plenty.

In Panel A the farmer on the large farm uses more labour than the farmer on the small farm, but in Panel B he uses less. Everything depends on the shapes of the curves, i.e. on the nature of preferences and on the nature of production relationships. The position is similar with regard to differences in the market value of output. A rise in the market value of agricultural produce may cause farmers to put in more or less labour and demonstrate normal or perverse supply response (Low, 1986).

The orthodox theoretical view of the allocation of labour among different enterprises is that it will be carried out up to the point where the marginal value product of labour in each line of production is equal to the marginal cost of labour. Where there is a competitive environment for labour, the marginal cost of labour will be a constant, equal to the going wage rate, and so the marginal value products of labour applied to each enterprise will be equalised.

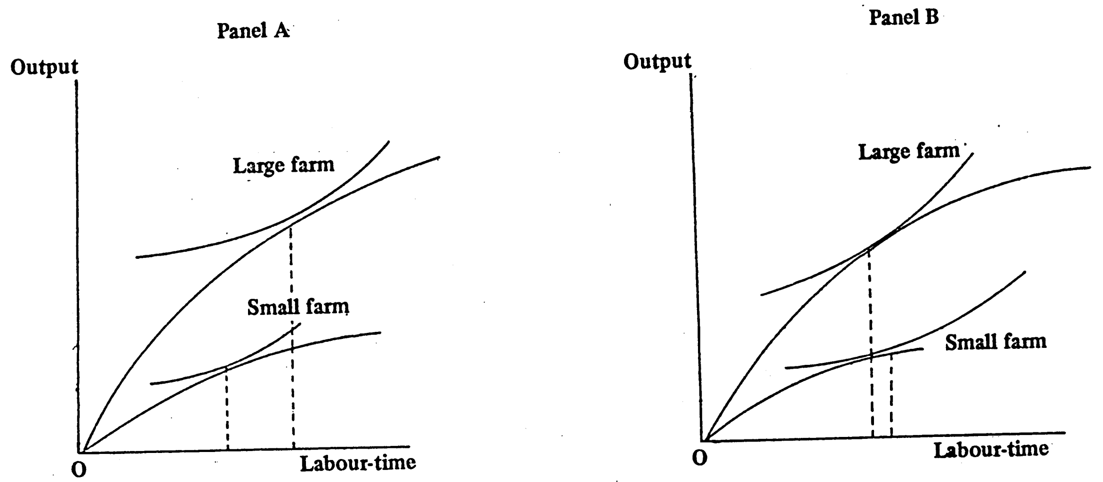

FIG. 2. Output and labour: large farm versus small farm

Schultz (1964) also held this view, even for traditional agriculture, but Lipton (1968) argued that the equalisation of marginal value products was not possible under the conditions faced typically by peasant farmers, and indeed was not rational even if it were possible.

In any case, in large parts of Africa no competitive market for labour normally exists, labour being supplied mainly by family members. Marginal value products in different crops would be equal to marginal subjective costs, the latter being a function of the productivity of the labour at different times and the subjective valuation of the product needed for subsistence. Probably the most important point made by Lipton was the argument that even if the farmer does have a good knowledge of the average magnitudes of marginal value products, it would actually be irrational for him to allocate labour on that basis. This is because when people are very poor their main concern is to survive and consequently they tend to operate an insurance strategy which Lipton called a 'survival algorithm'. Production will be biased towards crops with more certain, if less valued, output. The subjective versus the market valuation of output therefore has an influence on the allocation of labour. It is not only the valuation of output that is important, however; the (marginal) valuation of labour is important too. This was something that was not considered by either Schultz or Lipton, who assumed implicitly that labour was homogeneous and its market competitive. This is by no means so. If, for example, a crop can be planted at a time of the year when there is not much else to do, the subjective valuation of the labour required will be relatively low, which may make this particular crop a useful insurance crop even though there may be no great preference for it as a food crop.

Empirical data from Southern Africa (e.g. Low, 1982, 1984; Knight & Lenta, 1980; Sibisi, 1981; Lipton, 1977) show that both orthodox neo-classical and radical Marxist economists failed to explain the coexistence of record levels of development aid, and vast amounts of unused land (Fényes, 1988). The explanation must be sought in the field of comparative advantage in the household sector versus the market sector. According to this new neo-classical perspective, farm household members do not enter the labour market because the marginal returns to labour on the farm fall below the prevailing wage rate, but rather because some household members have a comparative advantage in wage employment compared with farm production (Low, 1984). This in turn may lead directly to reduced farm productivity per hectare and per farm worker. Reduced productivity implies declining profitability, which is caused by an increase in returns to off-farm employment, rather than by a decrease in marginal productivity of labour on the land.

This brings us to the question of management of the land resources in general and to the present state of the tenurial system operating in the black areas of South Africa in particular. The land resource of a country would be optimally managed in an economic sense if the land were allocated to its most productive uses as well as to the most productive users. Communal tenure in the homelands has contributed to the underutilisation of agricultural land, and at the same time proved to be unable to guarantee socio-economic equality. In the light of the above it is necessary to assess future land policies within the framework of physical and biological practicability, economic feasibility and institutional acceptability. A major theme in the discussion of the ethical aspects of economic systems is the conflict between the equality of distribution of income and the stimulation of economic growth. There is, however, no economic reason why growth should produce more equality or why egalitarian measures should not produce an equality of misery (Fényes *et al.*, 1987). Policy should therefore concentrate on equality of opportunity.

Access to opportunity via resources must also include the provision of goods by means of public capital in which citizens have property rights. Absence of this factor will lead to market failure where the initial distribution of assets is highly skewed, as is the case in the homelands at present (Fényes *et al.*, 1988a). Necessary affirmative action measures include equitable access to commercial and non-commercial agri-support activities as well as the complex issue of integration of the agri-milieu. A most striking aspect of the whole group of articles presented in a recent volume (Cross & Haines, 1988) is the stress laid by black commentators on free access to land in greater South Africa - the repeal of the land acts.

THE LIMITED RELEVANCE OF TRADITIONAL 'WESTERN' MACRO-ECONOMIC THEORY FOR THIRD WORLD DEVELOPMENT

Like micro-theory, traditional macro-economic theory reveals many inadequacies when applied to the realities of many less developed countries.

Manipulating aggregate supply and demand curves through general government economic policies in a time of stagflation appears no longer to be totally effective.

For example, traditional Keynesian policy for alleviating industrial unemployment, i.e. the creation of more urban jobs through increased government expenditure may, under certain real world conditions in poor countries, actually increase the level of urban unemployment, as a result of induced rural-urban migration. It may also worsen inflation.

Also, much of the traditional theory of international trade, based as it is on the same competitive assumptions of micro-economics, offers only limited guidance for an understanding of the actual mechanics of international economic relations between the rich and poor nations of today. Todaro's (1982) statement: 'Traditional economics is the economics of "equilibrium" and stability in a developing world of disequilibrium and instability' may be an apt summary of the situation.

FARMING SYSTEMS RESEARCH (FSR)

Even in the absence of the land acts and other remaining racial legislation one cannot anticipate that black farmers will farm their land in the same way as whites are doing at present. For this reason it is important to increase our knowledge of African farming.

Several experienced researchers (Belshaw & Hall, 1972; Palmer-Jones, 1977; Collinson, 1981) feel that much of the micro-economic information collected in the sixties and seventies was of limited relevance to small farmers in Africa for the following reasons:

- Most studies failed to address the information needs of small farmers in the context of their goals and management strategies.
- There was a large gap between the values, interests, and education of researchers and extension agents on the one hand, and small farmers on the other.
- Many researchers studied only one or at most a few enterprises.
- Most studies failed to take into account the impact of social and political institutions on household decision-making.
- Research findings were rarely disseminated in a form usable by farmers.

In the light of these difficulties, numerous researchers recommended that more research should be undertaken within a cropping and farming systems framework (CGIAR, 1978; Norman, 1980; Gilbert *et al.*, 1980; Byerlee *et al.*, 1980; Collinson, 1981, 1982; Eicher & Baker, 1982).

The primary goal of farming systems research (FSR) is to design research programmes which are holistic, inter-disciplinary and cost-effective in generating technology which is appropriate to the production and consumption goals of rural households in specific micro-environments. The focus on a systems approach to the study of African farming is a key feature which distinguishes FSR from old-style farm management research at least in Third World countries, which traditionally have focused on research on a commodity-by-commodity basis and carried out most experiments at research stations. FSR needs to be tested and refined. It must be supplemented with a vigorous commodity research programme and must have strong links with livestock research programmes in national and international centres. The problem of identifying groups of farms which are sufficiently homogeneous to serve as recommendation domains continues to be one of the main challenges facing FSR researchers (Hill, 1968; Collinson, 1972; Heyer, 1981). Another major problem is the issue of sufficient conditions for aggregation. Leading research on FSR in South Africa includes works by Rose & Tapson, 1986; Bembridge 1984, 1987; Vink, 1986, and Van Rooyen *et al.*, 1987.

CONCLUSIONS

This paper contrasts the different approaches to the role of the market in economic systems. Arguably, the role of the market in future will mainly be decided by political forces; solid micro-level economic data is needed for the formulation of macro-economic policies.

Some of the shortcomings of conventional - both neo-classical and Marxist-economic theories for understanding the smallholder mode of production-consumption relationship are shown, especially in connection with labour use, valuation of output, time management and the management of land resources. An implicit conclusion which is reached is that the existing land tenure system in the homelands has contributed to the under-utilisation of agricultural land and at the same time proved to be unable to guarantee socio-economic equality. On the other hand, land reform in the homelands only will not solve the major problems or correct the structural imbalances in South African agriculture. Policy should therefore concentrate on equality of opportunity for all. Until this can be achieved, an increased research effort in FSR and supplementary commodity research programmes is necessary.

NOTE

For a detailed discussion of the structural imbalances in South African Agriculture, see Fényes *et al.*, 1988b

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