

COMMUNICATIONS

social formations and land use : theoretical models, empirical objections, and some policy queries

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ABSTRACT

Three questions should be asked in any discussion on «peasant logic and technical rationality» :

why do the smallholders do what they do?

how do they react to crisis situations?

what is, or should be, the development planner's contribution?

To clarify the first question, we must review some of the conceptual approaches concerning peasant societies in the Third World. For the second question, we should consider the ways the peasants react to the seasonal — and climatic — variations which regularly affect agriculture in tropical countries. The third one evokes some of the problems arising from the peasant/technician confrontation, and the application of technological methods adapted to rural reality.

RÉSUMÉ

Trois questions semblent devoir être posées dans le débat sur le thème « logique paysanne et rationalité technique » :

pourquoi les petits exploitants font-ils ce qu'ils font?

comment réagissent-ils aux situations de crise?

quel est, devrait être, l'apport du planificateur?

Pour éclairer la première question, une revue de quelques approches conceptuelles des sociétés paysannes du tiers-monde apparaît nécessaire. La seconde question est abordée à travers les réponses que font les paysans aux variations saisonnières — et climatiques — qui affectent régulièrement l'agriculture dans les pays tropicaux. La troisième évoque quelques aspects de la problématique du face à face paysan/technicien, de l'application aux réalités rurales d'une technologie appropriée.

INTRODUCTION

It is impossible to discuss «smallholders» logic and technical rationality' without establishing some view of how small farmers behave and why they do what they do. But these

questions can be analysed at a variety of levels : the risk-averting strategies of the individual farming household, or, in a broader scale, the problems of social production and reproduction over time, are both valid levels of investigation. Yet, in development studies, confusions arise because the different disciplines concerned with development each have tended to

confine their efforts to particular levels of analysis; thus while economists study the micro-effects of household expenditure flows, social anthropologists analyse intra- and inter-systemic changes in the social relations of production. There is little apparent relation between the methodologies used and conclusions reached by these various researchers — and the jargon of the specialists tends in any case to render them mutually incomprehensible.

It is to be doubted, in fact, whether we are yet capable of producing cross-disciplinary general theories. Not, by insisting on too great a logical rigour, are we likely to produce anything but small morsels of prescriptive guidance for development administrators. So if we proceed on the basis of disjointed and partial analysis, and acknowledge that often we do not even properly see what it is small farmers are doing, this is a reflection of the true state of the art of development.

This paper, then, abandons the pretence of a smooth but superficial *masque*, and explores, under three headings, a number of issues which seem to be of increasing importance in the subject area of the conference. The three headings are : (i) Why do small farmers do what they do? (ii) What do they do in the face of pressure? (iii) How do and how should planners respond?

PART I : WHY DO SMALL FARMERS DO WHAT THEY DO?

Part I reviews a number of conceptualisations of third world smallholder societies within two broad categories of thought. Such a review is a necessary preliminary, if only to emphasise yet again the partiality of theories which claim to identify and explain the «key» variables in the relationship between social formations and land use, and to suggest that *how* development planners characterise that relationship has profound implications for development policy and practice, a matter which will be taken up again in Part III.

Over the last two decades, work on the social transformations which accompany economic development have been set, broadly speaking, within two abstractions of what characterises the development process : Marxist and Modernisation Theories. By a modernisation approach (LONG, 1977) is meant a view of society which categorises certain technological and social organisational features (and, less explicitly, political features, too) as traditional or pre-modern, and others as characteristic of «advanced» communities such as are to be found in the relatively prosperous and stable nations of Western Europe today; the «development process» is thus seen as one of «modernisation» or the transformation of the traditional.

In practical terms, the gradualist approach of the modernisation school is often contrasted to the «transformation» approach, by which is meant the attempt, under a development project or programme, to change or replace the «traditional» features of a community over a short period by means of large amounts of capital, new technologies, substantial infrastructural development, and often considerable reliance on expatriate «expertise»; examples are to be found among most settlement schemes; some cash-crop schemes; most plantation-with-outgrowers schemes. The minimum but not sufficient condition is that substantial new economic opportunities can be made available to participants. Though «modernisation» and «transformation» are often opposed as development approaches, the latter shares the assumptions of the evolutionists while attempting to

telescope the perceived processes of change through various «stages» and advance a community at one move into the «modern» world.

The framework for such an analysis was established in the 1960s, with HOSELITZ (1960) applying Parsonian pattern variables to the study of the development process (paired value patterns governing the behaviour of one person towards another, such as ascription-achievement), and Smelser (1963) identifying four processes of increasing structural differentiation which accompanied economic development; both SMELSER and EISENSTADT (1966, 1970) subsequently acknowledged the differences existing between various «pre-modern» conditions and between diverse «traditional» structures, and attempted to refine the categorisation of societal types subsumed under these labels, acknowledging, too, that both the nature of the initial impetus towards modernisation and the actual path of change would be diverse.

Field work using such models as conceptual guides rapidly emphasised the unevenness of structural change between institutional spheres, with the continuation of traditional structural forms and existing economic roles and relationships even during vigorous economic development (e.g. EPSTEIN, 1962; EPSTEIN and PENNY (eds), 1972). Much of the relevant field work was concerned with identifying and describing how far certain economic and technological innovations brought about changes in existing social institutions.

A number of such studies were conducted within a perception of historical change which holds that similar environments tend to give rise to similar technologies and patterns of labour use in production and distribution, and that «these in turn call forth similar kinds of social groupings which justify and coordinate their activities by means of similar systems of values and beliefs» (HARRIS, 1968 : 4). Criticised by Marxists as «reductionist materialism», such an hypothesis can neither explain the existence of different social structures within the same techno-environment, nor explain social change within the same technology (or conversely). As the various discrete social forms are held to emanate from independent developments in technologies through time, only associative and not causal relations can be established between a technology and its social form; neither the origins of change nor the apparent continuity of social life can be explained. But, misled by (often statistical) correlation, the studies tended both to assume causality and to reverse its direction. Thus Wittfogel on the organisation of «hydraulic societies» : «thus a number of farmers eager to conquer arid lowlands and plains are forced to invoke the organisational devices which on the basis of primitive technology — offer the one chance of success : they must work in coordination with their fellows and subordinate themselves to a directing authority» (WITTFOGEL, 1957 : 18), i.e. he postulates that the management needs of a large scale irrigation require and produce a bureaucratically centralised state. However, it is economically impossible for the management staff to be available before the surplus necessary to feed them exists as a product of the irrigation works themselves; and if the bureaucracy is essential for the functioning of the irrigation works, how can the works precede the development of the bureaucracy?

It became evident that structural analysis (1), while providing post hoc descriptions of the types and magnitudes

(1) Voir page suivante.

of change together with highly generalised propositions about kinds of change under the impact of particular external factors, could not encompass two important problems : the differential response of institutions to change, both within communities and between similar institutions in differing environments; and the problem of isolating the factors responsible for change. In other words, one could not assume that the results of similar types of economic development would be structurally the same everywhere.

Once it was reconceived, even for the purposes of abstract analysis, there was no uniform, isomorphic, deterministic, unilinear process, the problem of identifying the «end-state» of the process loomed larger; clearly, whatever a community is moving towards bears some relation to the ways in which that community moves towards it. Even assuming a simplification such as an idealised reality of independent «yeoman» farmers as the desired or probable end, could one assume that «all paths lead to Rome», or identify some as more or less likely to promote arrival?

The essentially functionalist (2) perspective adopted by some modernisation theorists produced a view of the «traditional» as an equilibrium state, evolving over time under external intervention towards a new equilibrium. Empirical studies based on a functional analysis of a given social system looked for, and described, changes in social roles, activities, values, and organisation over time. The tendency was to

overemphasise structural regularities at the start and end of the process, as well as the homogeneity, stability, and internal coherence of traditional societies. In seeking structural regularities at two (or more) times, then isolating the factors which appeared to have disturbed the initial «equilibrium», such studies were unable to uncover the dynamics of response and adjustment or the emergent properties which fed back into the process of change, or to evaluate the weight of the impact of internal as against external factors.

The evolutionary assumptions inherent in the modernisation perspective run into further difficulties when specific sequences of observed change are abstracted, and formulated as stages or sequences of development (see MOSHER, 1966; he identified five essential preconditions and five «accelerators» of the evolutionary process) (3). Advocates of such a perspective isolate two categories of problems; definitional ones (of delineating structural conditions precisely while avoiding the danger of abstracting situation-specific factors as key explanatory variables); and problems of historical sequence (of identifying prerequisite conditions) (4). There is, however, a third, conceptual problem. If one postulates that certain «modern» attributes are a *precondition* of modernisation, how is the prior existence (anterior emergence) of something which is an attribute of a posterior process to be explained? There is a further danger, exemplified in many such historical studies, that historical facts are loaded with the status of logical pre-

(1) Marxists and non-Marxists alike share a concern for social structure since «it is the knowledge of the fundamental structural properties of social reproduction which enables us to predict the way a society will behave over time» (FRIEDMAN, 1974 : 445). There are, however, almost as many definitions of structure and its role in the social system as there are social scientists. The weakness of «pure» structuralism is that it cannot explain how the forces of structural change come to be distributed within a social system, nor which can or cannot occur within a particular social form, nor define the boundaries of their actual influence. There is considerable confusion about the types of relationship which can exist *between* structures, the causalities evident *within* structures sometimes being (mistakenly) extended to inter-structural relationships. Causal relations properly exist between social *systems* or elements of systems and not between their structural properties. «The key to the whole affair is what has been referred to as the *relative autonomy* of structures, that is, the *autonomy of their internal properties*. A contradiction between subsystems occurs as the result of a dominant structure causing inter-systemic relations to strain to the limits of functional compatibility, but these limits are defined by the subsystems themselves. It is the relative autonomy of structures which entails the necessary existence of two distinct kinds of relationship, those within and those between. And it is the substructures themselves which doubly determine the larger whole : first, by delimiting the kinds of functions which can serve to unite them, and second, by fixing the breakdown limits of those functions» (FRIEDMAN, 1974 : 449).

(2) Functionalists seek to interpret roles and activities in terms of their rationality (utility) within social structures. Functional analysis tends to hover uneasily between mere description («the function of a school is to educate children»), and disguised implications of purpose («schools exist in order to educate children»). Forces of change are seen to reside in discordant or dysfunctional elements («formal, western-style education in Sri Lanka is dysfunctional to the country's economic progress»), but functional analysis of itself can neither explain the *origins* of these elements, nor how functional elements within one structure (education) affect the functioning of elements in another (the economy), nor how the rationality of functions *within* structures relate to the rationality of the social system as a whole.

(3) The idea of «sequences of growth» blossomed in the increasingly detailed study of European economic history and of the impact of colonialism on traditional societies, by post-war economists and historians, such as CLARK (1940), WINTER (1956), de VRIES (1954). The study of sequences of agricultural change received fresh impetus with the publication in 1963 of W. ROSTOW'S *The Stages of Economic Growth : a non-communist manifesto*, and then suffered a sharp decline as criticisms of Rostow's approach gathered strength. The Rostovian analysis contained four highly controversial postulates : (i) that, historically, all developed societies had passed through certain stages of economic growth, beginning with specific agricultural developments, in their progress to industrialisation and beyond ; (ii) that the process was linear ; (iii) that it was possible to identify a point of economic take-off ; and (iv) that beyond this point, growth was self-sustaining. The policy implications of his analysis was that if it were possible to ensure that a given package of factors and elements were present, and interacting in the right combination(s), growth would result. Meanwhile, other social scientists were applying the notion to field observation of «societies in transition» (HASWELL, 1963; CLARK and HASWELL, 1970; GEERTZ, 1963; EPSTEIN and PENNY, 1972). An associated attempt to discover the initiating impulse which set a society on its way to self-sustaining economic growth produced studies such as *The Conditions of Agricultural Growth* (1965) in which BOSERUP argues that while population growth itself is autonomous, in certain areas it causes intensification of land use and increasing agricultural productivity. GEERTZ developed this thesis to explain the observed process of «agricultural involution» in which a rising population is absorbed by producing at least as much output as needed to support the added labour input (acknowledging the limiting case where tenurial arrangements lead to an ejection of labour from the land, creating a pool of labour more or less unemployable within the rural sector, deadening off-farm employment, lowering aggregate incomes, reducing demand for services etc., i.e. where, even though output is rising, rural areas show a decreasing capacity to absorb their own labour). Subsequently, others such as KNIGHT (1974) have examined the relationship between land use and population growth with reference to contemporary developments in third world societies. Increasingly, the emphasis has been on the policy implications for modernising developing countries (SZCZEPANIK, 1975; HUNTER, 1970; HUNTER, BUNTING, BOTTRALL (eds), 1976).

(4) Lévi-Strauss criticised evolutionism thus : «It is really an attempt to wipe out the diversity of cultures while pretending to accord them full recognition. If the various conditions in which human societies are found, both in the past and in far distant lands, are treated as phases or stages in a single line of development, starting from the same point and leading to the same end, it seems clear that the diversity is merely apparent... Prior in date the scientific theory of biological evolution, social evolutionism is thus too often merely a pseudo-scientific mask for an old philosophical problem, which there is no certainty of our ever solving by observation and inductive reasoning». C. LÉVI-STRAUSS, *Race and History*, Paris, UNESCO, 1952, 14-16.

quisities, conferring historical necessity on (possibly) stochastic processes.

Such conceptual problems arise out of the essentially dualistic classification inherent in the modernisation approach, which rests on a perception of change as a series of discontinuities. Neither the gradual modification over time of principles of social organisation nor the origins or timing of change can be handled within modernisation concepts.

The increasingly precise definitions of pre-capitalist societal types arrived at in the course of exploring the limitations of modernising hypotheses, has led to various attempts at «typologising», in the expectation that more profound causal directions would become apparent as the material thrown up by recent and detailed field studies became sufficiently voluminous for careful comparison and grouping (5).

One of the earliest attempts (Murdock, 1949) led to the declaration «against the evolutionists, that there is no inevitable sequence of social forms nor any necessary association between particular rules of residence or descent or particular types of kin groups or kinship terms and levels of culture, types of economy, or forms of government or class structure», and the notion that historical events are a succession of accidental happenings persists strongly in certain quarters. More recent efforts at typologising, however, have revealed, at least, broad shifts in descent patterns in association with particular forms of political organisation and technology (DRIVER and SCHNESSLER, 1967). More recently, Jack GOODY (GOODY, 1976) has attempted to use the systematically-coded information on 863 societies throughout the world contained in the *Ethnographical Atlas* (MURDOCK, 1967) in combination with intensive studies of particular societies to uncover causal linkages between modes of transmitting property and other social institutions, including the mode of agricultural production and its associated technology. By introducing a sequential perspective into the cross-sectional analysis, he has formulated a developmental analysis of social change over time, subjecting his hypotheses to linkage and path analysis. Goody's detailed examination of the evidence and the complexities of his arguments can be simplified thus : differences between, and changes over time in systems of agriculture (specifically, the differences between and changes from hoe to plough agriculture), or «the mode of productive activity in agricultural societies», are associated with specific roles and patterns of inheritance. Within the framework, he discusses why the stress in Europe and Asia falls on marriage within the social group (monogamous unions as well as the role of concubine, step-parent, spinster, and adopted child), compared to Africa where the emphasis is on marriage outside the group, poly-

gyny, and co-wives, and the causes of cross-cultural differences in the sexual division of labour. But, as GODELIER (GODELIER, 1977) has pointed out, such types of analysis do not grapple with the problem of why, and under what conditions, kinship dominates social organisation (rather than, as among the Mbuti hunter-gatherers of Zaire, intergenerational relations; or, among the Incas, politico-religious relations).

In the ideological debates which plague sociology and social anthropology, non-Marxists use the fact of apparent predominance in some instances of kinship (or other ideological or «social» factors) to deny the Marxian hypothesis on the ultimately determining role of economics in history. (For a superb exposition by a non-Marxist see DUMONT'S *Homo Hierarchicus*, 1970, on the social organisation of traditional India) (6). The Marxist response (see GODELIER, 1977) is to argue that, whenever social factors appear to predominate, they are, necessarily, functioning as relations of production. «It is the relations of production which are the determinants in the dominance of any one element. They have a general determining effect on the organisation of society, since they determine both this predominance and through it, the general organisation of society». «The fundamental questions then become, under what circumstances and for what reasons does a certain factor assume the functions of relations of production, and does it control the reproduction of these relations and, as a result, social relations in their entirety?» (GODELIER, 1977 : 36). It is to consideration of the Marxist social anthropologists' arguments that this paper now turns.

GODELIER (1977 : 62) has expressed the aim of Marxist anthropologists as the search for laws which are both laws of function and laws of transformation, that is, which resolve the contradictions apparent in the functionalist and structuralist approaches between the synchronic and the diachronic. MARX had distinguished between the base and the superstructure in society : modern Marxist anthropologists seek to distinguish the laws governing transformations to the superstructure. They argue that such laws are to be found in the articulation of forces of production and social relations of production. It is by examining the specific structural causality of varying forms of productive modes that variations in types of social relations can be explained (7).

Both the location of these social relations (within the infrastructure or superstructure) and the definition within this context of «production» is problematic. Thus GODELIER at times seems to confine «production» within a substantive definition of economics (the production of goods), while TERRAY and MEILLASSOUX identify modes of production with types of production technology (factory; cottage industry, etc.)

(5) See *Ethnographic Atlas* (MURDOCK, 1967), and, more recently, *Village Studies : Data Analysis and Bibliography, Vol. 1, India 1950-75*, compiled at Institute of Development Studies, Sussex; published by R.R. BOWKER, London, 1976; and *Village Studies : Data Analysis and Bibliography, Vol. 2, Africa, Middle East and North Africa, Asia (excluding India), Pacific Islands, Latin America, West Indies and the Caribbean 1950-75*, compiled at Institute of Development Studies, Sussex; published by Mansell Publishing Ltd., London, 1978.

(6) It is a continuing weakness of Marxist social studies that they are unwilling (or unable) to confront the special problems posed by caste in India, or, indeed, of multiple societies in general. The challenge by non-Marxists, that Marxist analysis is itself coloured by its western-European origins and not, as Marxists would claim, necessarily relevant to the understanding of other societies with quite different cultural ideologies, has been refuted at the level of abstract theory; but the empirical doubts remain.

(7) Mode of production : denotes the mix of productive forces and social relations of production. Social relations of production : principally defined by the terms of ownership and control of the means of production and the social product (BOLIBAR, 1970; SAYER, 1974).

(TERRAY 1969, MEILLASSOUX 1967, 1972) (8). FRIEDMAN, on the other hand, argues that relations of production «are not simply the organisation of the work process... We must always distinguish the technological from the social process of reproduction. It is only to the latter that the notion «relations of production» can be applied if we are to avoid the confusion of certain Marxists who see a mode of production in every technological activity... Relations of production are those social relations which dominate (i.e. determine the economic rationality of) the material process of production in given technological conditions — at a given stage of development of the forces of production» (1974 : 446). And again... «the social relations of production define the specific «rationality» of the economic system. They are not, nor can they be, technical relations, a part of the organisation of labour» (FRIEDMAN, 1974 : 447). What is at issue is the dominance within a society of the logic of particular social relations; thus, while TERRAY and MEILLASSOUX might distinguish two distinct modes of production the factories of northern Italy and the peasant subsistence farming of the south, FRIEDMAN would argue that both activities occur within the predominant capitalist mode of production which determines the conditions within which both the northern factories and the southern subsistence farms operate.

GODELIER'S formulation avoids both «reductionist materialism» and «vulgar economism». The former term applies to the work of those social scientists adopting the systems approach of ecologists who reduce the study of economic and social relations to the specifics of technology and to man's biological and energetical interaction with the environment (DYSON—HUDSON; 1970, as an example), and it has been noted earlier in this paper (9). The latter, «vulgar economism», refers to analysis «which reduces all social relations to the status of an epiphenomenon associated with economic

relations which are themselves reduced to a technique of adaptation to the natural and biological environment» (GODELIER, 1977, p. 42) (10).

«Vulgar economism» applies functionalist analysis to a new field in which the interest focusses on the rationality of institutions with respect to their environments. It relies on description (i.e. «the function of x is to do what it does») or, by extension, to a definition of function as an adaptive mechanism under which «what it does» is no longer an observed datum, but carries an assumed (metaphysical) notion of purpose. Adaptation is negatively defined in terms of compatibility with environmental conditions so that, as SAHLINS demonstrates (1969 : 30), what is accounted for by the analysis is not the existence of a particular function, but merely its feasibility under given conditions (11).

Marxist anthropologists are critically involved in analysing the role played by exchange mechanisms in reproducing or modifying the conditions of production and in articulating different modes of production (12). This has led to detailed examinations of patterns of circulation and distribution in relation to modes of production, in particular to studies of patterns of kinship and descent. Thus MEILLASSOUX (1972) has argued that the controlled circulation of women through marriage is decisive for the reproduction of the productive unit itself in lineage-based societies of West Africa where availability of labour is the fundamental condition of production. He demonstrates the existence and function of certain social mechanisms, such as the passing of children between classificatory fathers and the adoption of «strangers», which enable adjustments to be made to labour-deficit lineages, and argues that customs such as gift-giving, dowry, and other prestations should be seen, similarly, as mechanisms for reproducing or maintaining the basic conditions of production for the community as a whole (13).

(8) «Machinery is no more an economic category than is the ox which draws the plough. Machinery is only a productive force. The modern workshop, which is based on the use of machinery, is a social relation of production, an economic category». Karl MARX, *Poverty of Philosophy*, Paris, 1847. Quoted in *Karl Marx : Selected Writings in Sociology and Social Philosophy* (eds.) T.B. BOTTOMORE; M. RUBEL, Harmondsworth, Middlesex, Penguin Books Ltd., 1965, p. 107.

(9) For further discussion, see M. SAHLINS, «Economic Anthropology and Anthropological Economics», *Social Science Information*, 8 (5), 1969.

(10) Social forms are perceived «as mere epiphenomena of technologies and environments, either by direct causation or by some economic rationality which makes institutions the produce of social optimisation» (FRIEDMAN, 1974 : 457).

(11) FRIEDMAN points out : «Once one has described the actual state of affairs it is tautological to say that a particular variable is adaptive simply because it has a necessary function in the total system. It is the system which defines the necessary functions of its elements, and to treat the element independently is to avoid the real problem» (1974 : 458). He concludes a critique of theories of adaptive function applied to the taboo on beef-eating in India as follows : «It is practically apologetic to assume that an institution is adaptive because it functions to keep a variable above a certain lower limit when, in fact, by treating that society as a whole we find that the present organisation established an upper limit which, if the society was reorganised, would itself appear in the lower range of adaptiveness. In terms of the potential of the system, we must revise the earlier assertion, saying instead that the taboo on beef-eating maximises total calorie and protein output within a set of constraints which holds that output far below capacity» (FRIEDMAN, 1974 : 458-459).

(12) «Exchange», too, is a problematic term. Since NEEDHAM remarked that «exchange is the fundamental capital of anthropology», the term has been stretched to cover many different forms of transaction and circulation, of varying meaning and significance.

(13) It is important to note the direction of causality between specific kinship relations and systems of exchange : exchange systems generate the specific distribution of kin categories and not vice-versa. The elaboration of rules and categories within the «domestic domain» are thus lower order mechanisms which enable individuals to operate the system of exchange. In *Structures élémentaires de la parenté* (1967), LÉVI-SRAUSS concentrates on a specific level of social formation (disregarding both inter-systemic relations and the structure of reproduction of society as a whole), and tries to show how a wide variety of kinship relations can be reduced to a few underlying exchange systems. The emergence of a specific variant cannot, however, be determined by his analysis. «On the contrary, the occurrence or possible occurrence of a particular structure depends on its functional compatibility with the constraints of the local techno-ecology... the ultimate determinant of restricted exchange is the social reciprocity demanded by the technical conditions of life... However, the form which this reciprocity takes is not in any sense «caused» by those conditions» (FRIEDMAN, 1974 : 453). Since forces of production do not cause relations of production (relations of production are not generated by the technological conditions of life), «the process of historical development depends on the relation between technology and relations of production» (1974 : 450)... «the level of development of the forces of production is determinant «in the last instance» because it sets the outer limits on the possible variation of the relations of production. If this can be called causality, it must be a negative causality since it determines what cannot happen rather than what must happen» (1974 : 457).

They are concerned, too, with other exchange mechanisms such as the distribution and circulation of commodities and money and the operations of markets in relation to modes of production. It is at this point that the work of anthropologists such as MEILLASSOUX, DUPRÉ and REY meets that of the neo-Marxist dependency theorists, such as Baran (1957), Stavenhagen (1965, 1969), and Frank (1967, 1969), who are concerned with the historical «fact» of the penetration of non-western societies by Western European capitalism and the concurrent imposition of relations of dependency between the third world and the western industrialised states. Both groups wish to explore the origins of structural inequality (between states, and between groups and classes within societies), but dependency theorists have a tendency to analyse structural change as a result of exogenous factors rather than to explain autonomous or internally generated transformations to the superstructure (14).

In seeking the laws of transformation (the means of reproducing or modifying the mode of production) Marxist anthropologists are looking at processes (the articulation between forces of production and social relations of production), processes which change functions and structures existing within a society. As indicated in the earlier quotation though different social factors predominate in different societies, — kinship, religion, politics, etc. — and appear to structure social relations and to function as the means of organising the reproduction of social relations, in the final analysis it is the relations of production which determine their predominance, and through it, the general organisation of society. In making this assertion Marxist anthropologists such as Godelier neither predicate «the nature of the structures which perform these functions, nor the number of functions which such a structure may perform» (GODELIER, 1977 : 62). It is possible, therefore, in pre-capitalist societies for kinship, by its plurality of functions (as organising relations of production, political relations, and so on) to be both «infrastructure» and «superstructure». However, «unity of functions does not imply a confusion of functions... This plurality of kinship functions is made necessary by the general structure of productive forces» (p. 123). In explaining the evolution of societies «we have to explain the appearance of new incompatible functions alongside the maintenance of former social structures» (p. 123). GODELIER has demonstrated the applicability of such a metho-

dology with extreme elegance with regard to the changes brought about by the rise of the Inca state and its subsequent subordination by the Spanish (15).

One of the major empirical difficulties encountered in applying such an analysis to studies of developing country communities, however, is that not all, and perhaps few farming communities display uniform social relations though arising from similar productive forces, or participate in only one type of productive activity, making it hard to determine which particular set of social relations of production is imposing its rationality on the economic system (16). Though, within an agricultural zone, it is possible to show that there is a tendency for certain types of settlement and land tenure systems to be associated with particular techniques of production, different types of social relations co-exist within broadly similar productive forces (see PALACIO, 1957; MATOS MAR et al., 1967). Further, a household might participate in (either severally or at different times) different kinds of work; indeed, the reproduction of the social relations of production for that household might be dependent upon the continuing availability of that variety. For example, the farming household might be at times dependent on hiring-out its «surplus» labour; sometimes be a renter of land, at other times an indebted tenant operating under conditions of traditional reciprocity in the provision of inputs and distribution of output (in India, at least, both conditions could simultaneously obtain); at still other times or in other respects, an independent «yeoman» farmer participating in capitalist forms of production and exchange; yet may be retaining some communal obligation to participate in collective activities.

PART II : WHAT DO SMALLHOLDERS DO IN THE FACE OF PRESSURE?

One particular type of pressure, and smallholders' initiatives in response to it, will be considered here : seasonality. Some seasonally-occurring crises, such as those arising from the timing, duration, and volume of unimodal or bimodal rains, are obvious (though often overlooked by planners); others, such as seasonal variation in births or deaths, less so (17). Only those directly affecting agriculture will be considered here, though it is recognised that all the seasonally variable factors bearing on the health and well-being of the farmer, his house-

(14) Criticism of the oversimplification of Frank's thesis and examination of dependency theories in the light of historical and empirical studies can be found in (MATOS Mar. et al. (1969); BURGES (1970); CASTILLO (1970) - in Spanish; PRESTON (1972); LACLAU (1971)). Some confusion is apparent in their varying attempts to distinguish the intrasystemic from the inter-systemic tensions of third world social structures; and over whether ideology and culture should be placed, within the Marxist structural hierarchy, with infrastructural or superstructural elements, since, e.g., kinship structures may function as both relations of production and as ideologies on which mythologies are constructed. With regard to the latter area of confusion, a distinction has been made between culture as that which renders things meaningful for members of a society, and socio-economic formation as that which renders things analytically significant. The cultures of most third world societies exist within the dominant logic (rationality) of the capitalist socio-economic formation; but while, e.g., the discovery of oil in the Amazon basin thus has significance for the analysis of socio-economic formations, it has no immediate (cultural) meaning for traditional Amazonian societies.

(15) «Qu'est-ce que définir une formation économique et sociale : l'exemple des Incas», *La Pensée*, N° 159, oct. 1971.

(16) In his study of the Incas, GODELIER discusses how it was possible for pre-Inca kinship relations and village tribal political relations, without a change in either form or structure, to change their function under the enforced incorporation of Indian communities into the framework of a new mode of production. His analysis thus does admit a greater complexity than the criticisms levelled here supposes; it does not, however, entirely meet that criticism.

(17) While seasons of weather or agriculture may coincide with seasons of higher or lower birth rates, it is rash to assume these factors are always causative. Sheila MACRAE has observed that in the Solomon Islands, where agricultural and climatic variations during the year are minimal, there is nonetheless a distinct seasonal pattern to the monthly notification of births, which as yet remains unexplained. «Seasonality of Births», Paper to *Conference on Seasonal Dimensions to Rural Poverty*, Sussex, Institute of Development Studies, July 1978, Mimeo.

hold, and his community in the end affect his capacity to farm productively and to participate in development (18).

Studies of response to seasonality have tended to concentrate on its most obvious expression, among pastoralists in arid or semi-arid areas. Though the seasonal symbiosis of some pastoral and settled agricultural communities has been observed, it has been discussed generally from the perspective of pastoralists, needs (BATES, 1974; BARRY, 1975). Where seasonality among settled farmers has been discussed, it is the economic consequences, such as price increases in the dry season or high rates of traditional crop season credit, which have been noted (Von PISCHKE, 1974). The «social» consequences, such as low nutritional levels, particularly of women and children, at the end of the dry season, or seasonal out-migration of labour, have been seen not merely as consequences but as «responses», but it is arguable that to judge, for example, seasonal labour migration a «response» is to mistake the observed fact, the proper question being not how individuals maintain themselves in periods of acute necessity, but how societies support themselves through year after year in which such acute crises are «normal», and ensure their continuation as communities. What is the response of the community to the seasonal loss of menfolk?

Because of the tendency of development planners to conceive of agricultural modernisation as solely or mainly a technical process set within accompanying or facilitating economic changes, some of the most important aspects of seasonality have been overlooked, at least until the last few years. Thus Vernon RUTTAN :

«The last two decades have been highly productive in advancing both our analytical capacity and our empirical knowledge of the role of technical change in agriculture. The dating of «modern» agricultural growth in the new conventional model or paradigm of agricultural development begins with the emergency of a period of sustained growth in total productivity — a rise in output per unit of total input» (RUTTAN, 1977, p. 197).

This kind of perception produced smallholder agricultural development programmes aimed at profit and production maximisation via the creation of new economic opportunities through the delivery of technical innovations. Failures in implementation were at first attributed to crude characterisations of that odd and perverse creature, the «non-innovating peasant»; then, as economists got to work on the details of small farm management, to the smallholders' preference for «risk-aversion» (WHARTON, 1968). Making a living in an environment whose chief quality is uncertainty, the small farmer ignored HYV-and-Crop Season Credit packages which promised higher potential yields in favour of traditional crop varieties and practices which at least assured a more stable return and a subsistence living though at a lower average yield, and whose management needs were sustainable within his own resources. What the technocratic researchers have been somewhat slow to realise, however, is that behind the caution with which the small farmer approaches new agricul-

tural programmes is the (often) very high degree of sophistication of risk-management within traditional land use.

Necessarily in economies where cash markets for labour or products do not widely obtain, food production for household consumption is an overriding agricultural objective. Within that objective, various strategies are adopted to spread risk and safeguard the food supply, such as (i) fragmentation of holdings and rotating cultivation rights; (ii) intercropping, staggered planting, saving of famine crops which can be stored unharvested; (iii) adjustments in management as the season progresses, e.g. by maintaining a smaller area than originally sown, concentrating on drought resistant or moisture-tolerant crops; (iv) reciprocal arrangements between households.

The sophistication of some small farmers' seasonal risk-management and the complexity of their farming practice (even though carried out under «primitive» agricultural technologies) has been demonstrated, among others, by Paul RICHARDS (1977, 1978) for Eastern and Northern Nigeria. In the area of his study the farmers used around thirty different varieties of yams, with varying qualities such as good storability but poor, sour taste; preferred flavour and texture but highly drought-prone and cultivable only in years of early and good rains; drought-resistant or adequately yielding in years of patchy and uncertain rain; and so on. The local research station was unaware of the richness of the biological responses the farmers had evolved to combat the seasonal risks inherent in their agriculture and, concentrating on the sole characteristic of yield per acre, were adapting for local use a few exotic strains which required fertiliser, water, and weeding, resources which would have to be supplied from outside. In other words, customary risk management strategies to secure the assurance of subsistence needs are often critically adjusted to the particularities of local agricultural uncertainty.

But it is not enough to note the mere existence of such practices and potential adjustments; whether or not they can actually be carried through relates in turn to constraints in optimisation which may arise in other areas. For example, Hausaland farmers' ability to overcome seasonal food shortages through renting land for irrigated cropping during the dry season, is dependent at least in part on their estimation of their own labour needs and labour capacities for food production in the wet, since debts incurred through dry season rental are mostly required to be repaid in labour during the wet season.

Seasonalities connected with labour are, in fact, often overlooked or greatly underestimated by development planners, nor, as far as I know, has there been any throughgoing study which takes into account its many aspects (e.g. migration, nutrition, labour indebtedness, family-size planning, etc.) as they affect agriculture. There is in addition a further aspect, underlying and either mitigating or intensifying the impact of annual labour seasonalities, and that is the variations in labour availability which occur through the «domestic life-cycle». This *has* received attention, mostly by social anthropologists working in West Africa, but little of their findings appears to have passed into development lore. One such study (OKALI, 1976) demonstrates very clearly how the acreage and mix of

(18) It is worth noting that not all the adverse (or beneficial) effects fall in the same season; nor are the correlations always as expected (e.g. peaks in births may occur at a time of maximum labour demand on women). Some of the effects are cumulative, some transitory, some permanent (lack of food during the dry season may drive young labour off the farm, reducing the household's capacity to farm sufficient land during the peak labour months of the wet to support even the residual household members during the following dry season).

crops cultivated by members of the family group varies over the phases of family life, how use of land passes between family members somewhat in accordance with their domestic life-cycle needs (children younger or older, parents or older siblings to support, position among siblings, residence relationship with spouse, etc.) and how transmission of land (and cash for opening up new areas to coco) is linked to the quality of family relationships and structures, which may be regarded in part as coping mechanisms against the differential labour supply between family units.

Though in addition to purely agricultural adaptations farming households have devised elaborate social mechanisms to cope with seasonal agricultural stress, it is doubtful if those who argue a strictly deterministic relationship between physical seasonalities of various kinds and particular social structures or behaviour are correct. In fact, there is the evidence of a few case studies to suggest that the character of seasonal stress itself changes as social relations of production alter under the impact of indigenous or exogenous forces. (RAYNAULT, 1976). That is to say, the character of, for example, dry season hunger, historically changes; it is not a static, absolute datum; its extent, impact and duration are not wholly physically determined but mediated by social and political relations, which themselves change over time. However, whether the relationship is necessarily reciprocating; reversible or temporary in its effects; symmetrical or asymmetrical (in which case, to what degree); or, in any particular case, what the breakdown limits of adjustment are, are questions which are only just beginning to be explored.

PART III : HOW DO AND HOW SHOULD PLANNERS RESPOND ?

One of the major misperceptions of smallholder societies which had led planners grossly astray is that agriculture is male work, that farmers are men. Women, it is maybe conceded, might maintain a small house garden for minor foodstuffs; women might trade foodstuffs and other crops; women might be major domestic processors of agricultural produce, but that women have in many African countries a major role in specific food or cash crop production, that they might play an essential agricultural role in the demands of the farming cycle, has been, by and large, simply not considered (PALA, 1975; NUKUNYA, PEIL, HILL 1975). Extension effort has been directed almost exclusively towards male farmers denying women access to modern practices, knowledge, and inputs; production programmes, by encouraging male labour to switch to the exclusive cultivation of cash or other marketable crops, have denied women the labour essential to the maintenance of their share of the household production effort; mechanisation programmes have been directed almost always towards men, often leaving women with a greater physical burden in the

maintenance of the family and the benefits of labour-saving accruing only to the men. And so on.

The increasing agricultural marginalisation of women under many agricultural development programmes is not the only consequence of the overly urbanised, technocratic and westernised spectacles worn by planners, however. Even where diagnosis of what Chambers has called «rural realities» appears sound, the ensuing development effort can go disastrously wrong because the dynamics of social interaction have been ignored or misunderstood; the «obvious» solution turns out, for a number of reasons, to be the wrong one (19).

The practical problems facing development planners and field staff in carrying out a «diagnosis» of a rural community, which will reveal the dynamic of interaction and suggest areas for intervention, within a neither unduly lengthy nor unmanageably detailed period of field research, are of immense importance (HUNTER, JIGGINS (eds) 1976). The standard type of one-off socio-economic survey simply does not reveal much that it is necessary to know (labour debts, for example, are rarely detected), or by revealing only one facet of a situation, leads to faulty diagnosis and inappropriate or insufficient action (20). In an almost unique effort in sub-Saharan Africa, the Institute for Agricultural Research and Special Services (IAR and the Rural Economy Research Unit (RERU) at Ahmadu Bello University, Nigeria, and the agricultural research station at Samaru, Northern Nigeria, have attempted to overcome some of the problems and to devise methodologies for improved diagnosis, farmer consultation, and locally-applicable research (NORMAN, 1974).

To what degree development staff can gain access to local agricultural and environmental knowledge, how such information can be extracted and interpreted, and, indeed, to what extent it is worth trying to do so, are all still largely unresolved questions, even though much lip service is paid to the need for farmer involvement at the planning stage of agricultural development, (vide experience under the Special Rural Development Programme in Kenya. IDS, Nairobi, 1975). Paul RICHARDS (1977, 1978) has field tested a number of methods to elicit what farmers know, to analyse what they know, and to elucidate the process whereby the farmers come to know what they know, rejecting the «straight-line logic» built into many questionnaires in favour of methods which build up a «knowledge matrix». One such is the Repertory Grid methodology based on Personal Construct Theory (KELLY, 1955). The kinds of issues such methodologies can illuminate are usually multi-dimensional, for example highlighting the limited and specific utility of plants or insects normally considered weeds or pests, or the differences in evaluations of utility between men and women or between farmers and extension agents.

«Many farming procedures have quantification built into

(19) «Long term interventions [in health, hygiene, and nutrition] are likely to involve fairly fundamental changes affecting environmental conditions or use of resources. Short term interventions (dietary intervention, for instance) may well be best applied during the relatively «benign» season in order or build up subjects to better withstand the inevitable rigours of the wet season. The immediately obvious solution of intervening during the rainy season may be logistically far more difficult» (ROWLAND, M.G.M. et al., 1978, p. 11).

(20) The record of public works to alleviate seasonal rural unemployment is littered with such examples. Poverty and unemployment are assumed to be contemporaneous; the problem is seen to be to ensure that public works do not take labour from agriculture at times of peak agricultural demand. «But if public works provide incomes at a time when they are less urgently needed, then the problem becomes one of savings and storage which involves not only questions of unemployment and total income, but also questions of institutions, the role of money lenders and control over markets. Public works on their own in, say, January, do not guarantee that saving will take place to meet consumption needs in July». (MAXWELL, 1978, p. 5).

the work, e.g. the sections of a yam barn and the regular size and shape of sub-sections within the yam farm (RICHARDS, 1973). Takete Ide farmers (Kwara State Nigeria) use 7, 11 or 15 guinea corn stalks woven together as the basis for a yam vine trellis, each stalk being the starting point for a short row of 10-20 yam heaps (the distance the farmer goes before straightening up and stretching), with the ultimate effect being a series of semi-standard and clearly visible subdivisions within the field analogous to the strips of the medieval European Open Field (ATTEH, pers. comm., cf. ORWIN 1966). Units of this kind can be used in place of a ready reckoner when estimating field size, but since in essence they record the ease or difficulty of cultivation rather than «area» in an absolute geometrical sense they will most probably «reckon» returns to labour rather than output per unit of land. Output per unit of labour may be the more important figure to have, but there will be little point in therefore introducing a land-use intensification procedure which shows up in terms of an improved output per unit of land if the farmer has no means of quantifying this and so of directly perceiving it». (RICHARDS, 1978, p. 7).

Another aspect to improving the match between «rural realities» and development action, that of «Intermediate or Appropriate Technology», perhaps has been more widely publicised than any other. But is it sufficient that technology should be «appropriate» to the resources of the people using, managing, and maintaining it? CHAMBERS (1978) has argued that technology should be actively used to restructure societies or to generate countervailing pressures to the forces of inequality and impoverishment, a task which at present is either ignored by development specialists as a political problem, or assumed to be performed by post hoc transfer payments, or left to institutional means. He suggests that new technology «can either impoverish or, through imaginative Research and Development, may have a countervailing effect on the forces which tend to impoverish» (p. 8). His own personal list of criteria for future technologies is that they should enhance the

productivity of resources in relation to their relative scarcities; that they should make more equal rather than less equal the distribution of and access to resources and income; that they should optimise net livelihood-intensity; and that they should enable the physical and biological environment to be more rather than less stable and self-renewing (CHAMBERS, 1978, p. 8-9).

Given that such technologies can be developed and an understanding of a community's social dynamic secured, the question remains : how can new techniques, inputs, services, knowledge be introduced? There is by now a vast literature on «extension» — its rationale, design and implementation of services, evaluation of impact, etc. — but generally speaking the view of extension which prevails among planners is of a delivery mechanism, passing expertise from the research establishment down to the farmer. There are, moreover, those who consider extension services should be limited to farmers capable (defined by a number of economic and physical indicators) of farming in a mechanised, modern fashion; smallholders whose resources will never be sufficient on existing landholdings to provide more than their own livelihoods should be «developed» or reached by other means. It is, however, precisely the mass of small farmers who must be reached if increasing population pressure on land is not to destroy future livelihoods; but the «lesson of experience» is that «orthodox» top-down delivery services are not capable of stimulating local development among smallholders (JIGGINS, 1977).

Increasing attention is being paid to devising alternative extension methodologies (ADAMS, 1978), but the gulf in understanding between those who devise and test theories about how small farming communities in developing countries maintain themselves and why each does so in one way rather than any other, and those who are committed to action in the field, remains enormous. While it would be hard to sustain the position that no action should be taken until our understanding has been perfected, it is nonetheless essential that orthodoxies be questioned, implicit assumptions be made explicit, and the consequences of blunt intervention be pointed out.

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