SUSTAINABLE AGRICULTURAL SYSTEMS AND GLOBAL INTERDEPENDENCE

By

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Unsustainable Agricultural Systems in both developed and underdeveloped parts of the World

Whether in the developed part of the World Capitalist System or in its underdeveloped part, nothing at present, not even man's energy resources in relation to his requirements, seems to be less sustainable than the agricultural system.

In the United States, where agriculture is most bountiful and productivity seems to be highest, soil scientists estimate that, on the average, each acre of farm land is loosing 9 to 12 tons of top soil a year *(1)*. As Robert Dale clearly demonstrates *(2)*, the factors which make for present high productivity: clean-cultivation, deep ploughing, heavy use of non-organic fertilizers, herbicides and insecticides, etc., are the very factors which are making for soil erosion. As a result, a situation is being created whereby, in Rodale's expressive words «the soil is used not primarily as the self-renewing food source of the plants, but mainly as a prop to hold them up. Food for the plants comes from fertilizers, usually the artificial kind». «Top soil losses», reports the U.S.A. General Accounting Office, «are threatening continued crop productivity» *(3)*. Since present high productivity is being achieved through the heavy use, in the form of various chemical agricultural inputs, of non-renewable resources, and at the cost of permanently destroying the recuperative power of the land, this seems to be a classical example of securing short-run gains at the cost of immensely greater long-run sacrifices. Nor is the interest of this example limited to the USA. That country merely blazes a trail which other developed countries are taking, one after the other, and along which some of the developing countries are being pushed.

Developed countries, however, are at present on the whole agricultural surplus countries. Especially as regards staple foodstuffs, they produce much more than they need to consume. Between today and the day of reckoning, much can be done to arrest erosion, and these countries have the material, though not necessarily the institutional means, to do it with: scientific research capacity and basic capital equipment. With the favourable population/arable land ratio which a great many of them enjoy, they can trade off space against time. Not so with developing countries, where the day of reckoning has already arrived. The clear signs are well documented in scientific works and – more importantly – in peoples living conditions: the dramatic transformation within two or three decades of developing countries, albeit still predominantly agricultural,from net food-exporters to net food-importers

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which moreover are increasingly unable to pay for their imported food requirements; the creeping desertification in the Sahelian and similarly situated regions, the resultant increasing incidence of malnutrition among the poorer segments of the population; the greater devastation caused by droughts and other natural calamities, and so on. In 1970, there were apparently at least some 500 million hungry and undernourished people in the world; by 1985, their number is expected to increase by nearly two-thirds. By far the greater part of these millions lives in Third World *mainly agricultural* countries.

Agriculture becomes a subordinate industry in developed countries

That agriculture is the sector where sustainable growth seems to be least secure, both in developed capitalist countries and in developing countries, is rather curious. The long-run threat to the agricultural systems of the West, we have seen, essentially comes from soil erosion. Yet it was only a century and half ago that Ricardo, that most prominent exponent of capitalist political economy, was speaking – in connection with rent – of the «original and indestructible powers of the soil». At the time he wrote, Ricardo was right, but times have since then changed. Though agriculture was being progressively tranformed in Ricardo's time into capitalist agriculture, it had not yet become an industrial activity. It was still a way of life, in which man's relation to nature, personified by land – a particular piece of land, to be handed over whole and if possible better to one's children – played a central role. Land was not just an economic asset, interchangeable with others, and discarded when its income-yielding capacity is exhausted. At least as far as production was concerned, the farm was almost a self-contained unit, in which land was the main means of production, and which produced on a regular basis, not only outputs, but also its own inputs. The productive circle was almost complete, and self-perpetuating.

Now in advanced capitalist countries, not only is agriculture being transformed into an industry, an agro-business where land plays a progressively less important part than other *extraneous* inputs machinery, fuel, packaged seeds, artificial fertilisers, insecticides, herbicides, etc., *that agro-business itself is also becoming more and more subordinate – technically and economically – to the industries which provide it with these inputs, or to the industries which process and market the outputs,* or *to the financial interests* (mortgage banks, commercial banks, insurance companies, etc.) *which preside over the various parts of the productive process,* and see to it that they get for themselves the best part of its product. To give an illustration. *(4)* an Iowa farmer who owns 1,200 acres who operates with 130,000 dollars worth of heavy equipment, who enlists the services of a sophisticated computer which helps him master his complex finances and consults commodity exchange reports as well the computerized cost-benefit analysis of various farm operations provided by the Central Iowa Farm Management Association, may look – and think – like a corporate board-chairman . He would be reported upon as a model of farming success. *(5)* The farm winds up grossing nearly 130,000 dollars. «After all the bills were paid, they were left with an impressive net of 62,000». «They», the farm family, are four adults working

full-time on the farm, supplemented by the work of their children. What is more, «Most of that (net income) had to be plowed right back into the farm as working capital to pay for seed, fertilizer and other supplies for this year – all of which have soared in cost recently. Diesel fuel, for example, costs 39 cents a gallon (up from 15.9 cents in 1970), corn seed costs 50 dollars a bushel (up from 27 dollars in 1973) and his fertilizer prices have quadrupled in the last two-years to 16 cents a pound» *(6)*. It transpires then that, especially judging by his net earnings as compared with those of skilled workers in other industries, the model farmer, far from being the sophisticated modern enterpreneur he is portrayed to be, is in actual fact the modern equivalent of the eighteenth century european weaver or the twentieth century japanese artisan who works under contract at home for the suppliers of inputs and collectors of outputs. They all have the semblance of independent producers. In fact they are purveyors of sweated labour in return for mediocre wages. The real profits are realized elsewhere, in the case of our modern farms in the input industries, the processing and marketing industries, as well as in the financial institutions, standing behind these industries, and behind the diminutive «agro-businesses» themselves. Under these conditions of short-sighted pursuit of profit by *dominant* industry and finance, land which had been the main means of agricultural production, with its own in-built self-regenerating mechanism, is being displaced in favour of industrial inputs based on non-renewable resources.

So long as a given economy can obtain unlimited supplies of these non-renewable resources, either from its own deposits, or by virtue of its ability to import them, and on extremely favourable terms, from abroard, no harm is done to the economy in the short run. In fact, under certain conditions relating to the disjointed nature of the market mechanism, a continuous short-run rise in productivity can be quite compatible with a long-term undermining of this productivity caused by an increasing scarcity of inputs based on non-renewable resources, coupled with a parallel deterioration of the self-regenerating capacity of the land. Nor do the farmers in such an economy need to feel permanently penalized as a special closed group. As labour directly applied to land becomes less and less needed, they, or their sons and daughters, can move on to other highly remunerative occupations within the same economy, including, of course, occupations within those industries which support agriculture or complement it, and where the profits from the agricultural sector - in the larger sense of the word - are being realized.

Unsustainable Agricultural Systems in Third World Countries

In some parts of the Third World, where the interests of local rural capitalism and Transnational Corporations (TNCs) producing agricultural machinery and inputs coalesce to produce what is commonly called the green revolution, or where TNCs are directly involved in Third World agricultural productive activities, similar developments are taking place, with the difference however that, as we shall see, *the negative effects of industrializing agriculture along capitalist lines are being magnified and produced now* rather than at a future date, while the *positive effects – profits and the creation of up-stream and down-stream remunerative employment – are being realized elsewhere, in the developed part of the system.* This process of industrializing agriculture, however, is limited to certain regions, and is of recent origin.

Yet most of the Third World countries which are not directly affected by it experience an equally acute crisis in their agricultural systems.

The fact of the matter is that, whether in the first or in the second type of Third World countries, the roots of the agricultural crisis are to be sought not in the introduction of certain technical innovations or in the absence there of, but in their particular pattern of socio-economic development. More specifically, *they are to be sought in the accelerating integration of these countries into the world capitalist system and the accelerating development of rural capitalism within these countries themselves.*

Varieties of Pre-Capitalist Sustainable Agricultural Systems

It is customary in western literature dealing with underdevelopment to blame certain antiquated Third World social systems: feudalism and semi-feudalism, absentee landlordism, etc., for the misfortunes of agriculture in these countries. No doubt many evils and drawbacks are associated with some or all of these systems: despotism, harsh exploitation of the peasantry, back-breaking labour, lack of dynamism, etc.. But whatever else they were, they were not producing unsustainable systems of agriculture. Whether in the tributary social formations which established themselves in the river basins and deltas of Egypt, India and China, or in the rain-fed peasant communities south of the Sahara, or in the nomad-inhabited deserts in-between, techniques appropriate to each particular environment were evolved and corresponding forms of socio-economic organization were maintained which ensured a remarkable degree of viability based on the sustainable nature of supporting agricultural systems *(7)*. They all had this in common:-

(a) The first claim on agriculture or stock breeding was - naturally – that of feeding, more or less adequately, the population, especially the rural or pastoral population;

(b) The techniques evolved elicited from nature its self-regenerating powers rather than destroyed those powers:

Much has been written about the great irrigation and drainage works, canals, dams, etc., undertaken by the ruling classes in the tributary social formations of Egypt, India and China to extend the cultivable area and ensure a relatively stable supply of irrigation water. Yet these would not have been of much avail had not the intricate, highly technical systems of land service and land utilization, evolved by peasants through centuries of practical experience, ensured the maintenance of land fertifility and the optimum assortment of agricultural products grown on a particular piece of land. One has to consult a rare classic such as F.H. King's «Farmers of Forty Centuries» *(8)* to understand how, through composting, green manuring, scooping silt from canals and putting it back on the fields, crop rotation, careful terracing and irrigation, the same fields were farmed for 4,000 years without destroying their fertility, farmers could support families of as many as 12 to 15 people (with something more to spare for the rapacious governments and landlords) on

less than two acres, and do it generation after generation without buying fertilizer.

Examples from Sub-Saharan and Saharan Africa:

Sub-Saharan Africa presents, or used to present, as many examples of sustainable agricultural systems as there were variations in that environment. These systems were the result of ingenious technical and social adaptation to the varied conditions of the physical environment. To make one illustration, in the Balant country, in middle Casamance, Senegal, the one available source of organic matter, in an otherwise exposed and infertile land surrounded by forests and watered only by seasonal rain, is animal manure. Accordingly, cattle herds – fed on stubble and grass during the dry season and on forest undergrowth when the fields are cultivated – are raised almost exclusively to act as moving organic fertilizer factories: The fairly-sized pens in which they are sheltered at night are the future fields intended for annual intensive cultivation of staple foodstuffs, hence these «pens» and with them the whole family compounds, are moved from one place to another every few years. The other surrounding areas where the cattle roam in search of food during the day, and thus receive smaller amounts of manure are left for less intensive, less dependable cultivation of less essential food. A spacial system of ploughing is devised whereby water is economised and soil erosion is minimized. Soil conservation is further strenghtened by careful maintainance of forest coverage on the sloping borders of the cultivated areas: With the practice of shifting homesteads from one area to another, individual property in land (as contrasted with communal family rights to it) fails to appear and so does the hierarchical social systems characteristic of dense village communities. Almost everywhere in Saharan Africa, similar examples of sustainable adaptations to environment can be found.

No life can be more hazardous than desert life, nor can physical environment be less hospitable. Yet everywhere where a desert exists, nomads have developed methods and procedures which enable them to make the best of this harsh environment and minimize the risks attached to it, methods and procedures such as rotating grazing lands, diversifying herds to suit both variations in pastures and in climate, matching herd-size to the productivity of the land and evolving various patterns of collective security. It is only now when these methods and procedures are being irrevocably undermined by the intrustion of outside forces, that their functions in sustaining life in a harsh environment are being noted and scientifically studied.

Sustainable Systems But not Idealized Ones

To emphasize the sustainable nature of these different agricultural system means neither to idealize them, nor to ignore the terrible risks to which they were sometimes exposed, and which occasionally led to their complete break-down. If they all, under normal circumstances, warded off hunger and starvation, in many cases food was neither sufficiently varied nor, by modern standards, fully nutritive. Especially in the first type of agricultural systems, food production on a large enough scale to sustain dense populations required an inordinate amount of physical hard labour, and left little room for other pursuits aiming at improving the material conditions of the majority of

the population. And, of course, these systems were all exposed in their different ways to the disruptive influences of man and the vagaries of nature. Foreign invasions and corrupt governments frequently destroyed intricate irrigation systems or allowed them to decay, causing untold sufferings to the population and leading occasionally to irreversible processes of desertification. Droughts and floods caused famines and catastrophes, and so on. What the previous paragraphs intended to bring out in relief, however, is the following:-

(a) Whenever catastrophes and pronounced imbalances occurred, they were usually due to factors *extraneous to the agricutural systems* themselves;

(b) Except in very special circumstances, *these systems contained in-built mechanisms for restoring their own viability;*

(c) They also contained in-built technical and social mechanisms for moderating the disruptive effects of natural calamities (e.g. homestead grain storage in peasant communities, expanded herds in pastoral communities which can be traded off against grains in lean years with neighbouring peasant communities, plus special ways of treating meat which made it last from one year to the next, all supplemented by various traditions of communal solidarity, etc.).

Comparison with Modern Third World Non-Sustainable Agricutural Systems

The features stand out clearly in contrast with the main tendencies of present Third World agricultural systems. The crisis through which these systems are passing – epitomized by their increasing inability to feed their population – is due, not to extraneous factors, but to reasons inherent in the socio-economic systems prevailing in those countries, though these systems can in their turn only be understood as part, the dominated part, of a much larger and more complex socio-economic system: the world capitalist system. The crisis is deepening with no in-built self-correcting mechanism within sight, so long as the socio-economic conditions which gave rise to it are being maintained. Finally, contrary to what might be expected in an age of advanced technology and easier transport and communications, the effects of droughts and other natural calamities are – as the recent experience of the Sahelan regions demonstrate – much more disastrous, much more farreaching and, it is feared, much more permanent than anything within recent memory *(10).*

Society, not nature is the culprit in the case of desertification:

Extraneous factors, that is extraneous to the socio-economic system, are sometimes invoked to explain the deterioration of agricultural systems at least in some Third World regions. Climate is one such reason, especially in connection with increasing desertification. Case studies recently undertaken for the United Nations Conference on Desertification, however «yield no evidence of a general regular decline in rainfall as a cause of desertification». The document reporting on these case studies states, it is true, that «many of them indicate the importance of drought or long periods of below-average

rainfall, as in India or the Sahelan zone of Niger Republic», but it also hastened to add that «the decisiveness of a particular climatic fluctuation may not be measured simply by its duration, or magnitude in physical terms, but it interaction with biophysical and human livelihood systems, and accordingly on the status and resilience of those systems at the time of crisis» *(11)*.

In a more explicit statement, the same document reports that «the consensus from the studies must be that desertification is manmade, and that man in the drylands has not been the passive victim of adverse environmental deterioration. The search for causes is complicated by our ignorance concerning the degree of disturbances of dryland ecosystems under human land-use that is consistent with sustained productivity, and by the background of climatic fluctuations that hinders comparisons in the long term. The case studies do however indicate that the rate of environmental degradation in the drylands, defined as desertification, has quickened over recent decades, and with it the vulnerability of their populations, and this requires an anlysis of the human and societal factors»*(12)*

Societal Factors are not just Population Growth and Rising Expectations

Having emphasized the human and societal factors as the operative and meaningful causes of the creeping desertification, one would have expected the United Nations study to address itself to the way different forms of socio-economic organization affects desertification or react to it. Instead, true to a certain pattern of thought prevalent in the West since the early forties, population growth and rising expectations, *taken in isolation from the socio-economic context within which they operate,* are identified as the primary causes of desertification. Thus, the above-cited study interprets undoubtedly lie within the dryland societies themselves, notably population growth as a determinant of increasing pressure on the environment. This has everywhere been reinforced by rising expectations in living standards and by an increasing technological means of attaining these in the short run. It is directly reflected in increases in the area of arable lands and in livestock numbers, and in the removal of trees and shrubs from uplands and desert plains to meet the increasing demand for feul and timber»*(13)*. This type of explanation, of course, is not limited to the problem of desertification. It is fashionably advanced whenever the deficiencies of the Third World agricultural systems or more generally, the problems of Third World poverty are being discussed.

Systems of production for Consumption and Production for Profits

But if population pressure and rising expectations were the *primary* factors in causing desertification and other deficiencies of agricultural systems, it is difficult to explain how certain societies are successfully combatting desertification and in fact raclaiming desert for agriculture, inspite of their remarkable rates of population growth and their continuously rising standard of living *(14)*; or how, in western societies at certain periods of their recent history, remarkable agricultural growth was combined with population

growth and, finally, why many subsaharan African countries suffer from malnutrition and are exposed to desertification and other forms of agricultural malfunctioning inspite of the fact that, by any standards, including the potential arable land/population ratio, they are grossly underpopulated rather than over-populated.

Population rates of growth, and even climatic changes, do of course like everything else affect in various degrees the viability of different agricultural systems. But this amounts to little more than saying that everything depends on everything else. If one wants to go beyond a catalogue listing of all the various factors affecting a given situation, the first thing to do is to distinguish what is essential from what is occidental or subsidiary. Not only is this the essence of scientific analysis ; it also happens, in the present context, to be the only meaningful guide to consequential action. For, just as man's action can have at present little effect on climatic fluctuations, in the same way can man's (that is government's) direct action have little impact on rates of population growth, these being influenced-under modern conditions – by cultural factors directly related to the mode and quality of performance of various socio-economic systems.

And it is the mode of performance of different socio-economic systems that causes agricultural economic systems to be sustainable or unsustainable. Going back to the various socio-economic systems which were cited above as giving rise to sustainable agricultural systems (the tributory systems, the Sub-Saharan African peasant communities, the nomads) one common trait clearly stands out. In all these systems, consumption, and – in the main – consumption of the producers themselves, was the direct purpose of production: there was no divorce, nor lengthy and intermediate steps between the one and the other. Hence the care of producers to apply all their ingenuity and experience to ensure the long-term viability of the natural systems on which production – hence their existence and that of their descendents – depended, for there was nothing else beyond what they immediately controlled to fall back upon.

In a monetarised, capitalist economy, production is only indirectly geared to consumption – with the profit motive and the market mechanism providing the intermediate links. The progressive specialization and social division of labour which are at the basis of this monetarization, are at the same time the source of the greater productivity of the system. Nevertheless, the various deficiencies of the market mechanism calculus can create such discrepancies between short-run profit making (and even productivity) and the long-run interests of the community as would undermine the long-run viability of the agricultural system (paragraph 2 of the present paper). It is not the place here to expand on this point, but it should be noted that in such an economy, there is at least the consolation that short – or medium – run prosperity, even if it is gained at the expense of one sector, or at the expense of the whole eco-system, can potentially be more or less shared by all sectors including the victimized sector itself. This is due to the relative mobility of the labour force and the compensating actions of an established central authority, the government of the given country.

Effects of Integration into the World Capitalist System during the Colonial Period

That consolation does not exist where the agricultural sector is part, not of a progressive national economy, but of an underdeveloped one which, being part of a much more complex world capitalist system, is dominated and disfavoured – in fact kept in a «progressive» state of underdevelopment – by the more advanced part of that system. Under these conditions, the main gains from industrializing agriculture accrue to the supporting (input) or complementary (processing and marketing) industries which are located in the advanced part of the system, with no possibility of the redundant local farmers moving into these industries and sharing part of their benefits, and no central authority to redress the balance in favour of the farmers. If anything, whenever political authority was exercised by the dominant colonial power, it was to provide the suitable conditions for the operation of these economic forces or to accentuate their tendencies and aggravate their effects: by forcing (through taxation and other means) a shift from subsistance and self-sustaining agriculture to raw material and other exportable agricultural production; by financing from local resources such public works as favoured that line of development, thus actually subsidizing exports in a market context which secularly shifted the terms of trade between exported agricultural products and imported manufactures in favour of the latter; and by taking various legislative, administrative and fiscal measures which blocked the development of national industries.

Thus emerged a pattern of international division of labour and of «global interdependence» which actually meant the complete subservience of one part of the system to the other. As far as agriculture is concerned, the substantive advantages of certain pre-capitalist institutions (the self-sufficiency of feudal and semi-feudal systems) were gradually lost, while their drawbacks were maintained (since the local dominant classes were supported – sometimes even created – by the colonial powers themselves) and aggravated by the superimposed negative effects of an alien and dominant capitalism *(15)*.

Third World Agricultural System becomes even less Sustainable after Independence. The greater Integration into the World Capitalist System and Speedier Internal Capitalist Development

Paradoxically enough, it was not until after Third World countries attained political independence that the unsustainable nature of their agricultural systems became more and more pronounced. The paradox is more apparent than real, and has little to do with the proverbial «population explosion and expectations revolution». It is simply that, except for those among the Third World countries which managed to pursue an auto-centered self-reliant strategy of development, the post-independence period meant greater, not less, integration into the world capitalist system (still as an economically dominated and subservient part of the system) as well as a speedier rate of internal capitalist development, though that capitalist development may of course assume different forms: neo-colonial, bureaucratic or just plain liberal capitalism.

The analysis of the deep-seated causes, nature and results of this double-tiered pattern of capitalist development would take us far afield. Those which are directly related to agriculture, however, can be briefly summarized in a few points. Whether in its neo-colonial, bureaucratic or liberal forms, post-indepen-

dence peripheral capitalism led to a great numerical expansion of local privileged classes with voracious appetites for the western-type of luxury consumption goods. These had to either directly imported from advanced societies, or locally assembled from imported parts in what has come to be known as the strategy of import-substitution, with even more disastrous effects on the balance of payment. In view of the various obstacles raised by advanced countries against developing countries' exports of manufactured goods, the strategy of «export promotion» – industrializing for the external market provided no viable alternative. Thus agriculture, more specifically agriculture *oriented towards exports* and not towards the satisfaction of the needs of the local population, was left to shoulder the main burden of importing the increasingly more highly-priced luxury consumption goods, or that of an ill-advised accumulation not directed towards serving the needs of the people or helping to develop agriculture itself.

The development of rural capitalism, even in societies where communal peasant or nomadic life was the dominant pattern before, worked in the same direction, since it shifted agriculture away from production for the immediate satisfaction of local needs towards serving the foreign markets which could bring to the local capitalists the cash in which they were interested; and away from self-sufficiency in inputs and the intensive use of local labour towards a pattern of industrialized agriculture gradually approaching the western pattern without however, as has often been repeated here, its compensating advantages. In certain societies, the destruction of the ecosystem resulting from capitalist development did not have to wait until the arrival of a faraway day. As the Sahelian experience demonstrates, the impact was immediate and particularly disastrous *(16)*. The impact of what? *In the final analysis, it is the impact of the greater integration of the Third World into the World capitalist system; of dependency masquerading as global interdependence.*

Are different Types of Global Interdependence Possible?

But perhaps there is another type of interdependence quite different from the present one, the one, for example, that is being paraded under the name of the New International Economic Order, which would allow nations to co-operate for their mutual and equal benefit, while maintaining or initiating in different parts of the world sustainable systems of agriculture? We have reasons – developed in some detail elsewhere – to believe that no such Order is readily forthcoming in the foreseable future, and that, if anything under this name is established through coordinated international action, it will be a variant of the present system of international division of labour which changes its form while maintaining its essence *(18)*.

Global Interdependence in Relation to Agricultural Systems

But apart from the general considerations which were advanced in support of this view, what would a New International Economic Order, a system of Global Interdependence, specifically mean in connection with agriculture? *At best,* it would mean a system of equal exchanges and comple-

mentarity based essentially, not on differences in levels of economic development, but on the difference in immutable factor endowments and non-essential specialization – similar, for example, to the type of interdependence which now exists between advanced countries. For this to happen, it would require the repetition of a nineteenth century pattern whereby the flow of capital and technical knowledge from one western country to another western country similarly sovereign but less developed helped to diminish the difference in levels of development. Or, alternatively, it would require the operation on a massive scale of a new Marshall plan directed towards Third World countries and yet helping them maintain their economic sovereignty.

Since the present relationships between the developed north and the underdeveloped south is qualitatively different from that which exists between western societies, neither of these two processes is likely to take place, or, if they did, to lead to results similar to those which obtained in the West. But, even if that double unlikelihood miraculously materialized, the end result would be equal, and in the short run useful, interdependence, but not sustainable systems of agriculture, since the Third World newly established more productive systems will conform to the same pattern now operating in the West: the establishment of an industrialized agriculture, based on non-renewable inputs drawn from the four corners of the world, hence undermining in the long-run, and on a global scale, the natural eco-systems on which agriculture should be based.

What is more likely to happen, however, if the present drive towards global interdependence is maintained, is not that «best» solution, but a greater hold of metropolitan based TNCs on the agriculture of Third World countries, especially those TNCs exporting agricultural machinery and other industrial inputs used in agriculture, or transporting, processing and marketing its products. Much that is actually now taking place under the slogan of Reforming the New International Order, or under various aid schemes designed and supplied by such international institutions – let alone private financing ones – as the World Bank and FAO conforms to that pattern. In its more moderate form it is leading to some such results as are taking place where a «green revolution» is underway: greater physical productivity in certain agricultural spheres but on the basis of greater differenciation among the peasantry, since only the better placed farmers and land owners are likely to gain access to the capital and credits required to have the installations or buy the expensive industrial inputs that go with that type of «revolution». Though productivity may in certain areas remarkably increase it is doubtful, given the specific conditions of population density and balance of payment difficulties which exist in those countries where that revolution is taking place, that this revolution is creating even a short-run sustainable system of agriculture.

The Effects of the TNCs

These results become much more pronounced, and the agricultural systems less sustainable from every point of view, where TNCs move in a massive and systematic form, to take direct hold of agricultural development, usually in less densely populated countries such as Latin-America (and now more frequently in some Sahelian and Sub-Saharian African countries) where agriculture is being transformed into industrial enterprises using relatively

capital intensive methods (especially in the form of inputs and fixed installations) in close backward and forward linkages with foreign based industries. Salaried labour is replacing the peasant economy, giving rise to a permanent army of the unemployed. The big agrarian enterprises, the agro-businesses, are rapid growth units strongly linked with international markets through marketing and transportation networks, in contrast to the slowmoving, even stagnating, units producing for the local market. Naturally such a development makes nonsense of the claim that what Latin America needs is agrarian reform, since the new agro-businesses are part of the capitalist industrialization of society, albeit a dependent industrialization. Capital accumulation is based on the appropriation of profits resulting from the use of wage-labour, and working under contract, hence becoming an appendix to metropolitan enterprises, whether these deal with agricultural machinery and inputs, or with processing commerce and finance, or even directly with special types of on the spot agricultural activities.

Lop-sided Development and Food Deficiency

Rather paradoxically, this type of development is leading to a reduction, not an increase, in food production for local consumption, not only in Latin America, but also in parts of Africa and Asia. Since it is the demand originating from the central advanced economies that is giving the main impulse to development, a new International Division of Labour is taking place whereby Latin American and other countries specialize in commercial products destined for exportation while importing an increasing part of their requirements from the United States, or doing without when no means of payment are available. Thus, within the realm of agriculture the new international division of labour means the concentration of strongly mechanized cereal production in metropolitan advanced countries, while developing export agricultural production requiring more intensive labour in the peripheries.

This, in fact, is the type of specialization that is favoured by financial international and metropolitan institutions. Interdependence, in this context, apart from the unequal exchange which it necessarily entails, means the increasing dependence of Third World countries on the advanced center for that most essential of all human requirements: food. Whatever else such agricultural systems may be called, they and the economies of which they are part can hardly be called sustainable *(19)*.

The «Distribution with Growth» and «Basic Needs» Approach

Whether in its more moderate form of «Agrarian Revolution», or in the more pronounced form of TNCs's take-over of Thrid World agriculture, the *social* results of this type of dependent agricultural development have become too obvious – and threatening – to be ignored, especially as it directly affects the great majority of the populations of Third World countries, the rural population, the most disfavoured among them, and where it can be most felt: the need for food. Together with this goes such well known developments as pauperization, permanent unemployment and marginalization. Hence the new strategy, orchestrated and promoted by a group of interna-

tional agencies under the name of «Redistribution with Growth», «the Satisfaction of Basic Needs...» etc. If growth is to be meaningful, that strategy claims, it must lead directly to a rise in the standard of living of the people. This can best – perhaps, in the light of past experience, only – be achieved by directly orienting developments towards certain target segments of the population, the poorest segments and for the satisfaction of certain target needs, the basic needs. Both targets can be reached if development is concentrated in the rural areas, oriented towards the production of food and other necessities, and secured by means – such as appropriate, or non-sophisticated technology – to which the poor can gain access and which would give them full employment. A whole new science is being developed and theoretically refined to devise project and program criteria which would make them satisfy these requirements.

Obviously, such a strategy has its heart in the right place. Yet it is doubtful, whether it can successfully achieve its aims:-

(a) On the one hand, it is extremely doubtful that by concentrating on a number of projects and programs or even of over-all national policies, however well selected and «scientifically» based these may be, significant modifications can be introduced in the working of a given socio-economic system which run counter to the basic tendencies of that system and, even more importantly, to the basic tendencies of the complex world economic system of which that system is but a subservient part. Such strategies might – and did – achieve certain results when applied in the social-democratic context of developed countries. Conditions however are radically different in the dominated, underdeveloped part of the world economic system.

(b) On the other hand, that strategy, by emphasizing simple technology applied essentially to the agricultural sector, runs the risk of slowing down growth without achieving much in the way of a more equitable distribution *(19)*.

The Strategy of Auto-Centered Self-Reliant Development

The fact is, significant changes in the right direction cannot, in the specific conditions of most Third World Countries, be brought about piecemeal, e.g., by selecting certain projects and programs according to certain specified criteria, while leaving intact the rest of society: ruling classes with expensive consumption habits, free market laws or bureaucratic development strategies pulling in inappropriate directions, subordinate and unfavourable relations with the outside world..., etc.

No doubt the corner stone of a sustainable economy, including a sustainable agricultural system, would be the orientation of production towards the satisfaction of the basic needs of the people, and the efficient, free mobilization of the productive powers and creative abilities of the people for the achievement of this aim. This, however, cannot be reduced to the propagation of simple, labour-intensive technologies spread in thousands of

agricultural units over the country side and producing food and other necessities for the rural population. That might be necessary. In fact, in the specific conditions of Third World countries, it is necessary, especially in their initial stages of economic development. But concentrating on this aspect would be tantamount to walking on one leg. The other leg would be the parallel development of industry – using a varied assortment of techniques – not for import substitution or export promotion, but to serve the industrial needs of developing agriculture as well as the consumption needs of the producing population. But to walk it is not enough just to have two well-balanced legs. A number of essential other things would be needed. In our present context, chief among these would the major structural changes which would make the implementation of such a strategy possible, a sane system of social calculus which would take into account the future needs a self-sustaining eco-system, and a sane relation with the outside world which makes the best of the opportunities offered by the world economy without being subservient to or bleeded by it. In the short-run this might concretely mean reducing or cutting away many of the existing links of «interdependence» with that outside. But the reward would be, besides ensuring a sane and balanced pattern of development, a different type of real and more fruitful interdependence at a future date *(20)*.

FOOTNOTES

1. Robert Rodale: «Where Are Our Children's Farms», in Organic Gardening and Farming, Sept. 1977, p. 63.
2. Ibid.
3. Ibid., p. 65.
4. See the feature-article «The New Up Life Down on the Farm» in Newsweek, May, 1976. The same article mentions also that the tractor which cost 17,000 dollars in 1973 costs about 30,000 dollars today. The new tractor has an enclosed cab air conditioning and AM-FM radio, thus the farmer «can stay out in the fields a couple of extra hours when it is cold or wet or hot» – that is, lengthen his working time.
5. Ibid.
6. Ibid.
7. The term agricultural system is used in the present context in a wide sense which includes pastoral systems.
8. First published in 1911, and recently reprinted by the Rodale Press Inc., Book division, Emmaus PA.
9. The adaptation of the Balant community to their physical and historical environment is much more complex, sophisticated and effective than these lines suggest. For an analytical description of this and other Senegalese rural communities, see the monumental work of Paul Pelisier «Les Paysans du Senegal», 1966.
10. For an account of the extent of the disasters caused by drought in the Sahel as well as the reasons why these disasters were magnified by the development of local capitalism among the nomadic population. The opening to the world market and the activities of ranching and other TNCs, see «Qui se nourrit de la famine en Afrique? Un document politique sur la famine au Sahel», 1974, Paris, Maspero. For a simi-

lar analysis concerning the drought in Somalia, consult: «Somalia in Transition; Proceedings of the IDEP-SIDAM Seminar on Socio-economic transformation and the Problems of the Transition in Developing Countries, The Case of Somalia». Mogadiscio, October-November, 1977.

11. United Nations Conference on Desertification, August-September 1977. Document A/CONF. 74/4: «Synthess of Case Studies of Desertification» p. 67.
12. Ibid., p. 72.
13. Ibid., p. 72.
14. c/o documents of the UN Conference on Desertification No. A/CONF. 74/18 «Combating desertification in China»; document Gobi»; Document A/CONF 74/17 «Control the desert and create pastures» in China; Document A/CONF. 74/22 «Integrated Desert Development and Desertification Control in the Turkmenian SSR»; Document A/CONF 74/23 «GOLODNAYA STEPPE, USSR». Also, according to recent FAO projections, there is likely to be a gap of 76 million tons for the year 1985 in terms of foodgrains for the developing countries as a whole. For Asian Centrally planned economies, these projections imply a surplus of 9 million tons.
15. For an analysis - among many others – of this process, cf. section I of our essay «Third World Revolt and Self-Reliant Auto-Centered Strategy of Development», IDEP reproduction/4o6. A summary of this essay appeared under the same title in «Towards a New Strategy for Development», A. Rothko Chapel Colloquium, Pergamon Press, 1979, p. 198-239.
16. See references cited in footnote 10.
17. Cf Sections II and III of our above-cited essay «Third World Revolt... etc.».
18. The analysis of the Latin American experience is based on an article by James Petras: «Les Nouvelles Formes d'exploitation des Paysans par le Capitalisme Mondial», Le Monde Diplomatique, juin 1977.
19. For a development of this view, cf, Fawzy Mansour «Third World Revolt...etc.» paragraphs 45-46.
20. For a detailed analysis of the strategy of Auto-Centered Self-Reliant Development, especially as it relates to the issues of global interdependence, confrontation and cooperation, cf. ibid. Section IV.

RESUME

Dans l'article qui précède, l'auteur essaie de faire une étude comparée des systèmes agricoles dans les pays avancés et dans les pays du tiers-monde. Après avoir montré le rôle que joue le sol et les engrais et autres produits utilisés dans l'agriculture dans les pays avancés,il aboutit à la conclusion suivante qu'en définitive les pays développés ne courent pas un risque mortel en adoptant un tel système agricole car en gros ils produisent tous un surplus agricole surtout en ce qui concerne les produits de base et qu'en plus ils disposent de beaucoup de moyens pour arrêter l'érosion des sols qui résulte de l'utilisation de tous ces produits. Et comme il le dit «dans ces conditions d'une recherche de profits immédiats par les industries dominantes et les finances, la terre qui

avait été le moyen principal de la production agricole avec son propre méchanisme régénérateur est entrain d'être remplacée par les inputs industriels basés sur des ressources non renouvelables».

Tel n'est pas le cas du système agricole dans les pays du tiers-monde. L'auteur passe alors en revue toutes les raisons avancées pour expliquer les problèmes agricoles qui se posent aux pays du tiers-monde notamment la sécheresse, la désertification, un système social trop archaïque ne permettant pas la production du surplus agricole etc... Ensuite il fera remarquer que «ce n'est qu'au moment où ces méthodes et procédures sont entrain d'être irremédiablement minées par des forces extérieures que leur pouvoir de conserver la vie dans un environnement hostile commence à être noté et analysé scientifiquement». Pour l'auteur c'est la société qui est coupable dans le cas de la désertification et la crise est due non pas à des facteurs externes mais à des raisons inhérentes aux systèmes socio-économiques qui prédominent dans ces pays bien que ces systèmes ne peuvent se comprendre que comme une partie, celle qui est dominée, d'un autre système socio-économique beaucoup plus large : Le système capitaliste mondial. C'est ce système capitaliste mondial qui a donné naissance à un modèle de division internationale du travail et à une interdépendance globale qui dans les faits voulait dire une soumission complète de l'une des parties du système à l'autre. Dans la dernière partie de son article, et à la lumière des analyses et critiques qu'il a formulées dans les différentes parties, il propose quelques solutions comme la stratégie des besoins essentiels et le développement auto-centré non sans préciser les limites de ces stratégies et les conditions à remplir pour que ces stratégies puissent être efficaces.