

AFRIQUE ET DEVELOPPEMENT

AFRICA DEVELOPMENT

Vol. XII, No. 2, 1987 - ISSN 0850 3907

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ECONOMIQUE ET SOCIALE EN AFRIQUE

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3339 CODES SG

CODESRIA acknowledges the support of a number of African Governments, the Friedrich Ebert Stiftung, SAREC and IDRC in the publication of this journal.

Le CODESRIA exprime sa gratitude aux gouvernements africains, à la F.E.S., à la SAREC et au CRDI pour leur contribution à la publication de ce journal.

AFRICA DEVELOPMENT AFRIQUE & DEVELOPPEMENT

A QUARTERLY JOURNAL OF THE COUNCIL
FOR THE DEVELOPMENT OF ECONOMIC
AND SOCIAL RESEARCH IN AFRICA

REVUE TRIMESTRIELLE DU CONSEIL POUR
LE DEVELOPPEMENT DE LA RECHERCHE
ECONOMIQUE ET SOCIALE EN AFRIQUE

Vol.XII, No.2, 1987

Editor

Zenebeworke Tadesse

(CODESRIA)

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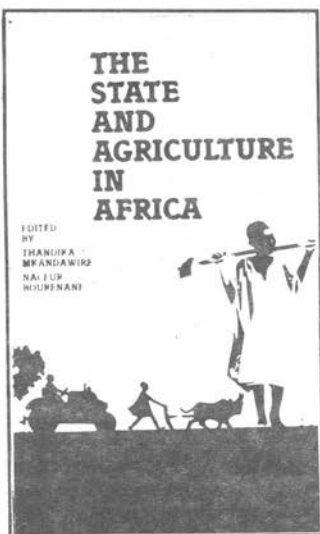
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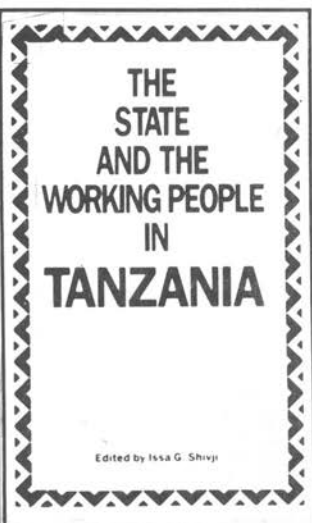
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Il comporte six études réparties en deux grands thèmes qui sont les suivants : les mutations des structures étatiques sous la pression de la pénétration étrangère et la continuité et la rupture dans l'Etat marocain post-colonial. Ces études viennent après une introduction détaillée de Abdelali DOUMOU qui a assuré la direction scientifique de ces travaux.

Dans l'ensemble cet ouvrage constitue non seulement une contribution significative aux études consacrées à l'analyse de la nature et des fonctions de l'Etat en général mais il complète harmonieusement des études faites antérieurement sur "l'Etat dans les Sociétés dépendantes".

AFRICAN AGRICULTURE: THE NEXT 25 YEARS-OLD PROBLEMS, OLD SOLUTIONS AND SCIENTIFIC FOIBLES

Archie Mafeje*

The Crisis in its Intellectual Setting

Although rarely acknowledged, scientific training, aside from imparting skills, is a process of social and intellectual indoctrination. The exact form(s) this takes depends on prevailing circumstances. In the present epoch, as a consequence of foreign aid and transfer of technology, there have emerged a particular breed of scientists, the "experts". Their special trade mark is that they always know. If they were to confess otherwise, they would do themselves out of their jobs. This is in contrast to ordinary scientists who are socialised into admitting their ignorance and might even use that as an excuse to seek opportunities for research, but whose results they cannot guarantee in advance. In an age where "development" has become a problem of bureaucratic management, it is hardly surprising that donors and international agencies exhibit a bias towards spawning "experts".

To varying degrees, underdeveloped countries have been objects of experts since the 1960s. Whether this has been beneficial or not is an open question. Perhaps, if it had been so felicitous, Africa, which of all continents had been inundated with so many foreign experts and advisors, would not be in the perilous situation in which it finds itself today. Ironically enough, it is the same parlous state of affairs which seems to be an open invitation to ever more experts and advisors. Starting with the World Bank Report, Accelerated Development in Sub-Saharan Africa: an Agenda for Action in 1981, various international agencies have taken it upon themselves to produce what purports to be analytical studies and policy guidelines for Africa. In the circumstances, it is not always possible to disentangle the ideological presuppositions of particular agencies from the intellectual pretensions of their "experts". From the point of view of

the African consumers, this might be immaterial. But what if all Africans were not merely consumers and that some were, instead, the antithesis of "experts"?

One of the tragedies of the foreign aid system is that international agencies and experts assume the absence of their professional counterparts in recipient countries. This is consistent with the ideology of "experts". Knowledge has become a commodity, purveyed by international agencies and negotiated with governments. In this context scientific prescriptions are often nothing more than intellectual rationalisations of what is ideologically preconceived. But when things go wrong, international agencies, experts and governments alike are quick to blame the people, and not themselves. This volte face exposes the cynicism of the epistemology of subject-object in bureaucratically conceived strategies for development. If there are subjects who are capable of perverting what is believed to be sound development plans, is not this sufficient justification for involving such subjects in the formulation of the plans themselves? Or could it be assumed that people who are threatened with hunger or even famine can afford to act out of sheer perversity? A logical and honest answer from an expert would be that the people do not know any better. If so, then why the new creed about "people's participation"? On what scientific and professional grounds is this founded?

Scientific grounds for promoting cooperation between specialists and popular masses could be found. But under modern conditions this might prove subversive for two reasons. First, it is generally assumed by experts and international agencies that bourgeois science and philosophical presuppositions are intrinsically superior. This is based on the fact that, historically, they are associated with the most advanced system so far, industrial capitalism. This general association is shared by most governments in the underdeveloped countries. The role of the "expert" is but a natural outcome of this concurrence and degradation of local knowledge its logical concomitant.

Then, coming to what constitutes the second barrier, those who endeavour to give scientific credence to folkways fall foul of policy-makers in their countries and incur the disfavour of international agencies. Experts might show some intellectual curiosity towards them, but they normally do their best not to be identified with them. In worst cases every effort is made to discredit them in official circles. This often leaves the people without scientists who are committed to them. This is a great handicap because people's knowledge, while often sound, is always implicit. It requires some

formally trained researchers to make it explicit. It is quite conceivable that such practice could in the long-run give birth to new paradigms that are unknown even to industrial capitalism. In scientific activity the norm is that no possibility should be denied until it has been found inefficacious. Likewise, no facile assumptions should be made about even those systems which have worked before.

Nowadays, it is all too common for development theorists to be overly concerned about defending particular modes of production and try to prove their case either by extrapolation or by making ahistorical assumptions. Not only does this divert attention away from the people who are supposed to be objects of solicitude in development programmes but also denies the possible existence of valid forms of knowledge outside the known and approved orthodoxies. In agriculture when topics such as land tenure, cooperation and income distribution come up, the instinctive reaction of experts and their sponsors is to check into which Euro-centric mold, capitalist or socialist, recommendations made by independent-minded or other-oriented researchers might fall. Yet, it is in agriculture that different cultural traditions and modes of organisation are most likely to manifest themselves. If it seems that industry is technique-neutral, it is yet to be proved that the same is true of agriculture. This is even more so now that there is growing concern globally about lack of adaptation to different eco-systems and about the need to introduce sustainable systems of production. In some cases, especially in agriculture, this has meant or might mean reversion to the so-called traditional techniques or methods. This cannot be done, without raising fundamental questions about the production function of modern agricultural economies or economies at all. Yet, this is definitely taboo to international agencies and "experts" often avoid it like plague.

The Agricultural Crisis in Africa and its Causes

As far as the agricultural crisis in Africa is concerned, some of our reservations can best be illustrated by a systematic review of the FAO main report, African agriculture: the next 25 years (Rome, 1986). Not only is FAO a specialised international agency but also it took the trouble to produce a special expert report on the state of agriculture in Africa. Presumably, the study had been approved by African governments. If so, then one wonders what they were expecting to be revealed which had not already been identified in the Lagos Plan of Action (1980). Secondly, having virtually failed to implement the recommendations of the Lagos Plan of Action, how were they hoping

to implement the FAO recommendations which are even more wide-ranging in agriculture than the latter? For those who were involved in the deliberations over the Lagos Plan of Action and saw in it prospects for a sustained effort by African governments towards self-reliance, such questions are not unjustified. Not only is the sincerity of African governments at issue but also there is justified anxiety about external manipulation of African countries or about the impact of international politics and propaganda on development policies in Africa. Therefore, without denying the need for international cooperation and aid, the need for vigilance is its obverse. This applies *ipso facto* to foreign-sponsored studies.

It is an acknowledged fact that African agriculture is undergoing a deep crisis, especially food production. Experts are not agreed on what the underlying causes are. According to FAO, "Six well-established trends are currently affecting African food production". These are:

- (i) A bias against agriculture in government policy;
- (ii) High population growth rates;
- (iii) A decline in the rate at which arable land and harvested area are being developed;
- (iv) A lack of technological change, which is leading to a wide-spread stagnation or even decline in crop yields;
- (v) Accelerated degradation of the environment; and
- (vi) An external economic environment that is making it more difficult for most African countries to balance their budgets.

These statements by the FAO experts can be described as, at best, platitudinous and, at worst, as erroneous. First of all, it is not clear whether the expression, "well-established" is used in the historical or statistical sense. The distinction is an important one because in some reports the agricultural and food crisis in Africa is treated as a sudden occurrence, attributable largely to physical factors. This has a certain appeal to African technocrats and politicians because it shifts the burden of responsibility elsewhere and also creates the illusion that economic recovery in Africa could be achieved without some radical changes in the existing production relations and the social institutions which govern them. Viewed from this angle, it is apparent that the present crisis in African agriculture is an outcome of a number of social and economic factors which pre-date the natural calamities which have befallen Africa in recent years. This would emphasize historical at

the expense of physical factors. After all, physical factors have in history been an object of manipulation by human beings. This is what technological progress and the destruction of the ecological balance is about. Predictably, it is put back-to-front in the FAO report.

Here, we are not referring to archaeological evidence from so many thousands of years ago as the FAO experts do, but more to what has happened over the last one hundred years. For instance, there is evidence that the replacement of the African inter-cropping practices with mono-culturalism by the colonial authorities had a direct impact on the preservation of the soil. This was not motivated by a desire to improve the lot of poor and backward peoples but rather the wish to enrich the industrialised nations was over-riding. Likewise, ill-motivated attempts by colonial governments to sedentarise or to confine nomadic pastoralists to limited grazing land so as to make more room for arable agriculture accelerated the phenomenon of over-grazing. This was bound to be the case because no positive steps were taken to help the nomads adjust to changing economic conditions. Worst still, in some areas such as East and Southern Africa, it was not a question of pressure on the land. Rather, it was a deliberate attempt to monopolise land by white settlers so as to force the displaced or impoverished African subsistence producers into the capitalist labour market. After independence the same pattern of land distribution was maintained in countries such as Kenya, Malawi, Swaziland, and lately Zimbabwe. However, the aim was not to cheapen black labour (except perhaps in the Ivory Coast and Malawi) but rather to "modernise" agriculture i.e. to encourage estate farming. Therefore, the cultivation of escarpment land in Malawi with the consequent erosion of the soil reported and regretted by the FAO experts need not be associated with land scarcity. The same is true of Swaziland, Kenya and Zimbabwe.

In so far as all African countries encouraged capitalist, commercial or estate agriculture for export crop production, the general claim in the FAO report about lack of technological change in Africa, "leading to a widespread stagnation or even decline in crop yields" (p.1) is somewhat misleading. There has been adoption of new technologies in African agriculture but the trouble is that the process has been highly selective. As is acknowledged in the FAO reports, there has been a bias towards cash crops: "Fertilizer allocation... has been biased towards export crops, partly because these crops are more profitable. In the Sudano-Sahelian region about 60 kg of fertilizer nutrients were used per hectare during 1979-81 to grow export and non-food crops but only 2kg were used on food crops". Furthermore, in those areas in

which small-scale producers had responded vigorously to new technologies e.g. in areas of white settlement in Southern Africa and East Africa, they were discouraged as a matter of official policy. Later, general poverty and deprivation, as elsewhere in Africa, rendered these new technologies inaccessible to them. As the FAO experts are well aware, credit, extension services and scientific research got concentrated on export or cash crop production. But even this failed, something which the FAO experts do not mention. Yet, it might be crucial in any discussion on technological change in agriculture in Africa.

The question of what type of technology to be adopted in African agriculture has not been resolved yet. Since colonial times modernisation of African agriculture had been equated with direct transfer of European and North American technologies to Africa and with large-scale capitalist farming. At the physical level it was doubtful if what applied to agriculture in the temperate zones would also apply in the tropics. At the social and cultural level there was the question of whether European modes of social organisation could be replicated in Africa. This was particularly true of land tenure and family systems. When progressive farmers seemed to falter in the 1970s under the aegis of "inter-mediate" technology, there was a re-newed debate (which was not confined to Africa) about the appropriateness of imported technologies. The outcome of these debates was an emphasis on "indigenous technologies". By and large, all this remained vague and abstract, if not nationalistic. Its significance is that it pointed to the failure of what had more or less been taken for granted.

The "progressive farmers" had made no progress, technologically and socially, since the 1960s. If they seemed to have achieved greater productivity per man/woman, there is no evidence that they attained any greater output per hectare than the small producers throughout this period. This is despite the fact that they were favoured in terms of credit and technical inputs. Here, we are not referring to extension services because so far their value in most of Africa is dubious. Experience shows that extension services did not produce progressive farmers in Africa but rather followed them, as if to justify their existence bureaucratically. If the extension services had been effective at all in black Africa, the rate of social reproduction of progressive farmers over the last 25 years would have been much higher than it has been so far. Indeed, part of the explanation for the crisis in African agriculture resides in the fact that African "progressive" farmers have not been able to reproduce themselves steadily over the last 20 years. If in fostering them the African governments as well as their colonial predecessors were hoping to promote capitalist agriculture on the

continent, can their atrophy be seen as a measure of the failure of the capitalist revolution in African agriculture?

On this question the FAO pronouncements are necessarily ambiguous. Unlike the World Bank which in its "Agenda for Africa" re-affirmed the export-oriented colonial structure and concentration on large-scale farmers (an unmistakable reversal of McNamara's policy), FAO is critical of such an approach and complains that:

"Governments have allocated in the past, especially in the fifties and the sixties, a larger share of their agricultural support to export crops in their desire to generate export taxes and to earn foreign exchange. They often biased the allocation of other production factors and support services in favour of export crops, notably capital investment in irrigation, market development and rural roads, and the provision of fertilizers and extension services" (p. 40).

The strictures against African governments by FAO are thoroughly justified. What is not clear is whether in advising against concentration on export-oriented producers FAO is cognisant of the fact that this might spell doom for capitalist farmers in black Africa. The would-be capitalist farmers in Africa did best in the 'fifties and the 'sixties when, as FAO acknowledges, they were getting maximum support from their governments. When this was no longer the case in the 'seventies and 'eighties and when the need for structural adjustment was greatest, they seemed to have collapsed completely or reverted to subsistence production. Once again, this is alluded to in the FAO report: "The farmers responsible for the success stories in export crop production are, in many instances, the same farmers who have not expanded staple crop production beyond their own subsistence needs" (p. 40). Why? The FAO experts seem to think that these farmers were unable to find alternatives because of unfavourable government policies, including terms of trade, credit, supply of consumer goods and limited market opportunities. It would be very ironical if African governments which, with a few exceptions, are committed to capitalism would be the ones to kill the goose that lays the golden eggs. Evidence from countries such as Malawi, Kenya, the Ivory Coast and the Cameroon shows that commercial and estate farmers in fact received differential treatment from the incumbent governments. The contradiction is that all this did not avert the impending agricultural crisis, except in the Cameroon where commercial farmers played a big

role in food production.

In this context the urban bias thesis, which the FAO experts share with so many other commentators, is analytically superficial. In aggregate terms all the countries in the world are urban-biased and yet all the countries in the world have not experienced a deepening agricultural crisis. It is true that there have been net transfers of value from agriculture to urban areas in Africa. But, historically, this is true virtually of all countries during the transitional period from agrarian to modern economies. Therefore, we still have to be told what is so peculiar about Africa.

First, it is very important to point out that not all African farmers suffered a disproportional transfer of value to the urban areas. The big farmers benefitted from government services, credit, capital investment in such things as roads and irrigation schemes, and quite often were allowed to market their own produce. They were not favoured only because they earned desperately needed foreign exchange. In most cases they had a powerful lobby in the national government. What came to be known as the "plantocracy" in the Ivory Coast, the farmers in the Gezira Scheme in the Sudan, the tea estate farmers in Malawi, the black Kenyan farmers who inherited the former white highlands largely by virtue of their association with government, and the big ranchers in Botswana are obvious examples. The big coffee farmers in Tanzania and Uganda, who found themselves confronted with reformist governments in the late 'sixties, represented the same phenomenon. It is not that these farmers were necessarily the most productive or gone-ahead. They simply had political clout.

It is arguable that the medium-sized or self-made commercial farmers were the most dynamic in the 'fifties and the 'sixties. Among these may be mentioned the migrant cocoa-growers in Ghana, the cotton growers in East Africa and the maize-growers in Southern Africa, especially in Malawi. Generally, they did not have so much power. They compensated for this by joining the cooperative movement which played largely a political rather than an economic role before independence. After independence the cooperative movement seems to have lost its political significance, leaving the farmers more or less defenceless against the marketing boards and other government agencies. It is possible that this led to demoralisation among the only category of African farmers who represented the true capitalist spirit in that they were go-getters. This is in contrast to the estate farmers who were fairly conservative, not particularly concerned to use their resources to the maximum, but more concerned to extract guarantees,

from the government, of which they constituted part. This trend might be re-inforced by the fact that the first generation of African politicians and higher civil servants who bought estates in anticipation of old age are about to retire with all their political capital.

If it was not easy sailing for medium-sized commercial farmers for lack of effective political power, then how much more for the small-scale producers who had no bargaining power whatsoever because they were largely unorganized and what they produced was grossly undervalued. In doing the latter the African governments inadvertently committed the worst strategic mistake since they came to power. Not only did the small producers take to cash crop production and became by virtue of their sheer numbers and over-taxation the greatest source of national revenue but also remained the major producers of food under very unfavourable conditions. They represented an under-privileged sub-sector within agriculture. They received neither technical nor financial support from the government. This was a serious omission, socially and economically, as is shown by the present food crisis in Africa.

In the wake of the crisis African policy-makers as well as international agencies have all of a sudden become preoccupied with what is seen as increasing rural poverty in Africa. Recurrent or threatened famines are cited as incontrovertible evidence. While it is technically difficult to measure "poverty", it is arguable that a crisis in food production by itself and in itself is no index of poverty. It is a sign of underdevelopment. In contrast, famines are an end result of absolute poverty since they are directly correlated with the problem of access which is determined largely by the amount of income at the disposal of each family or household. Dynamically, this is also reflected in the ability of each such unit to invest in production. As far as the latter two points are concerned, it is apparent that the majority of the African rural dwellers has known nothing else but poverty since colonial times. Therefore, the basic question to answer is not why do they starve but rather why do they continue to be poor?

In agriculture FAO attributed this to "technological stagnation". Reading off from the surface, this is not unjustified. But it begs too many questions to be useful. Why has the majority of African agricultural producers not made any technological progress over the years, compared to other Third World regions? One facile but commonly held view (often privately) among experts is that they are too primitive or simple to appreciate the advantages of advanced

technology and capitalist production. In spite of any racist beliefs that the world of experts might harbour, the problem of backwardness in the historical sense can be raised, without imputing any inherent characteristics in any group of people. Objectively speaking, Africa is technologically behind the other regions of the world. But this observation has to be qualified by taking cognizance of the fact that technologies are not only culture-bound but are also eminently production-function specific. African producers could, comparatively speaking, be backward technologically and yet be able to meet their needs. If this were not the case, they would have all disappeared from the face of the earth by now. If they seem to be confronted with that precise prospect at this historical juncture, then we must ask ourselves what went wrong?

As was mentioned earlier, the FAO experts emphasized physical factors such as demography, ecology, weather, infrastructure and some economic constraints such as lack of investment, adequate marketing facilities and supply of consumer goods. These are legitimate concerns but are, theoretically, soft options whose prescriptive value is questionable. A country such as Malawi scores very high on all the points mentioned and yet it is as much a part of the current agrarian and agricultural crisis in Africa as any of the other countries in sub-Saharan Africa. Malawi, once a success story, is faced with declining agricultural performance, including the tea estates, increasing rural poverty and outward migration, and serious structural adjustment problems. It is apparent that the problem is much deeper than the FAO experts would have us believe. Our hunch is that it is rooted in the production function of the African agricultural economies and the historically determined inability of the production units therein to reproduce themselves consistently and progressively.

In their report the FAO experts had taken for granted capitalist production in agriculture in Africa and made technical recommendations which were consistent with that supposition. The only inconsistency is that they seem to have been unaware of any logical connection between development of capitalist agriculture and growing landlessness among the rural poor and between falling rural incomes or depressed agricultural wages and unavailability of labour in agriculture. Even so, can it be assumed that African agriculture is developing along capitalist lines? Whether yes or no, need it do so in order to develop? Capitalist development succeeded eminently in the developed countries because it was consistent with itself. In Africa not only are there inconsistencies between property, production, and exchange relations but also there is, more than in any other region, a

major disarticulation in the production function of the agricultural economies. If before colonialism there was a natural link between production and popular or local needs, since the introduction of colonial capitalism there has been a continued discrepancy between resource use and local or popular needs. Included in this is production of food for local consumption and raw materials for nascent industries. Instead, there was a contrived response to external demand even among the small producers. Consequently, when the African agricultural economies seemed to be flourishing in the 1960s, it was not due to growth of domestic markets but rather to external markets. Likewise, where attempts at import-substitution seemed to be making headway, it was not due to internal accumulation and expanding markets but rather to vertical integration with developed economies. When these external economies all of a sudden collapsed or fluctuated violently, they could not but precipitate the worst crisis in the extroverted African agricultural economies.

Therefore, it is surprising that the FAO experts, after enumerating all the pitfalls of extroverted African agricultural economies, suggest that African countries could improve "their international competitiveness through better marketing and further devaluations (p. 64)". How is this to be reconciled with the fact that even the most advanced agricultural economies, far from being competitive in international markets, are suffering from chronic structural surpluses and thus have to subsidize their farmers. Secondly, how does this proposed monetarism overcome the implicit distortion in the production function of the African agricultural economies? Would not competitiveness in international markets by African countries exacerbate the discrepancy between resource use and local needs referred to earlier? If the EEC countries are suffering from structural surpluses, it is not too difficult to see that deep-down African countries are suffering from structural deficits. Nor could this be treated as largely a problem of pricing policy, as the FAO experts seem to realize but refuse to abandon their neo-classical suppositions (see inset, p. 42).

There are two structural points at issue here. Agriculture needs the urban areas as its most effective market. Urban areas need to be fed by agriculture. But in a situation where the farmers are uncompetitive and their cost of production is relatively high and where the urban wages are relatively low, neither side is able to realize its conditions of livelihood. Something has to give. This could be one of three things: (i) government subsidies for particular food crops; (ii) cheap food imports; or (iii) commensurate wage increases. Government subsidies are always accompanied by price controls which often prove to be a

disincentive to the majority of producers. From the point of view of laissez-faire capitalists or international agencies like the World Bank and the International Monetary Fund, such interventions are most undesirable as they interfere with market forces and inevitably lead to inefficiencies.

The point, however, is that, given declining food prices globally, the majority of African producers are not likely to fetch much higher prices for their commodities under present market conditions. Their most likely fate is to be expropriated by more efficient commercial farmers and by multinational corporations. A further contradiction is that, being hard-nosed capitalists, the laissez-faire theorists cannot with equanimity recommend higher wages for urban workers so as to enable them to be effective consumers of expensive, local foodstuffs. Thus, their strategy would benefit neither the small producers nor the majority of urban workers. Nor could it lead to any long-term development of the national economy for, while it allows for rapid accumulation by those who can, it restricts the domestic market and thus creates a predisposition towards external dependence. This is, in fact, a perpetuation of the colonial production structure whose function is largely responsible for the unmitigated crisis in African economies.

This takes us back to the question: what is the nature and the future of African agricultural economies? In sub-Saharan Africa the capitalist mode of production has not so far succeeded in realising itself. Structurally, there are too many issues that have not yet been resolved. For instance, there has not been general supplanting of customary use-rights by individual property rights in land. In a country such as Kenya which is believed to have carried farthest the process of privatisation of land in sub-Saharan Africa, it has been reported by R.S. Odingo that:

"In the case of the areas formerly occupied by European settlers and since then re-settled by thousands of small-scale African farm families, only limited portions (estimated to be 20 percent) have been turned over to private ownership with legal titles, the rest of the land still being under the authority and stewardship of the "Settlement Fund Trustees". But even here, unsupervised and illegal subdivision is taking place to accommodate the natural population growth" (FAO Report, mimeo, 1985, p. 6).

Furthermore, he remarks that:

"The transition from European concepts of land tenure to a more practical 'peasant type' of arrangement, has been accompanied by a massive drop in rural incomes..."

He concludes:

"The sample study reveals that, contrary to expectations, the population in the recently re-settled land areas are no longer enjoying increased prosperity, and that in actual fact there is every danger of the complete reversion to subsistence agriculture necessitated by recent population increase, and the fact that the authorities have not put a stop to illegal subdivision of plots within the settlement schemes" (op. cit., p. 7).

More examples could be given. In Togo it was reported (FAO, mimeo, 1985) that up to 90 percent of the commercial farmers sampled got their land through "traditional channels". In Malawi Mkandawire estimated that estate farms constituted no more than 17 percent of arable land (Carlsson, 1983; pp. 28-47).

Secondly, as a consequence of the land question, potential or actual labour has not been totally divested of its land rights. Hence, in most cases they combine subsistence production with labour migrancy in search of wages. Here, land rights should not be confused with access to adequate amounts of land in all cases but rather with sustainable kinship claims which militate against the development of individual property in land in the true capitalist sense. Likewise, collectively controlled use- rights over land should not be thought of as incompatible with commercialisation of agriculture and individual appropriation of value. Theoretically, this is an important point because in classical literature development of a market in agriculture or commodity relations had been believed to signal unambiguously the emergence of the capitalist mode of production. Participation in the capitalist market by the majority of African agricultural producers does not seem to have made capitalists of them in any meaningful sense of the word.

Thirdly, while there is general exploitation of especially the small producers via the bureaucracy, systematic exploitation of hired labour is not characteristic of sub-Saharan Africa. It is only commercial and estate farmers, who constitute a very small percentage of the agricultural producers in this part of Africa, who rely on hired labour. Even in their case such labour is not retained on a permanent basis. It is either migratory or seasonal. Furthermore, their relationship with their employers might take non-capitalist forms e.g. patron-client relationships which are not uncommon. Then, if in classical literature it had been presumed that production relations are diagnostic of particular modes of production, this need not apply to societies in transition. Indeed, this has prompted some analysts to talk of articulation of modes of production in Africa and to accuse colonialism of having promoted a process of "dissolution and preservation" in the agrarian sector. Whatever else might be said about this type of conceptualisation, one thing is clear, that is, sub-Saharan Africa has not enjoyed a progressive division of labour in agriculture. Far from attaining a capitalist transformation in agriculture, she has been characterised by retention of what might be called the "household economy". This term has not yet been used as a critical term in African studies. Instead, it has been used interchangeable with terms such as "family farm", "peasant producers", "subsistence producers", and even "lineage mode of production".

The three critical variables which these various terms have in common are: (i) small-scale production, oriented largely towards domestic needs; (ii) dominance of joint family rights in land over individual rights; and (iii) division of labour that is largely based on kinship ties. These are the parameters within which production and social reproduction of labour occur in African agricultural communities. In this context the "household" refers to that unit which has effective control over its allotted means of production (land and/cattle), allocation of labour and redistribution of the product. In other words, unlike a family whose members in Africa might live variously, the household is characterised by a common budget, irrespective of its actual kinship composition. Most households in modern Africa are not self-sufficient. They have been seriously disrupted by two pervasive, external factors, namely, migrant labour and the capitalist market. They share labour with commercial farmers and urban employers but bear the cost of the social reproduction of all such shared labour. The persistence of labour migration is a clear indication that even under these very unfavourable conditions most households cannot do without wages from outside.

From the point of view of the national economy, a schizophrenic situation prevails. Neither does agriculture get specialised to support itself nor does industry expand such that it absorbs permanently the migrant workers and their families. This missing structural transformation is one of the requirements of a growing modern economy and hardly any of the African economies have achieved it. Secondly, for unspecialised agriculture the development of a capitalist market is not necessarily a blessing. As had been remarked earlier, it gives rise to another schizophrenia between the needs of the rural households and external demand. The fact that households need cash income to buy consumer goods and services need not detract from our basic argument about the distorted function of the national economies in Africa. Whatever the capitalist-oriented experts might argue, there is no running away from the fact that in economies such as the African ones the relationship between use and exchange value is not self-regulatory. This is a major policy issue which over-rides any possible technical solutions. It also has nothing to do with the often alluded to dichotomy between subsistence and surplus production. Maximisation of utility value is not incompatible with surplus generation in a growing economy. However, this cannot be achieved through a one-sided development strategy, as has been the case in Africa under the influence of Western advisers and experts.

Biases in favour of maximisation of value notwithstanding, what is most needed in Africa is rationalisation of production, labour and commodity markets. Contrary to what international agencies such as the World Bank and IMF believe, production in Africa must be geared primarily towards satisfying local needs. In order to intensify technological development and possibilities for surplus generation, producers must be given every opportunity to reproduce themselves progressively and consistently. In agriculture this means that more households should be able to retain as much labour as would guarantee their self-sufficiency and more. Obviously, this is contingent on adequate access to land and cattle. In the foreseeable future medium-sized plots, relying on family labour, using increasingly appropriate mechanical devices seem to be the best option for Africa.

This is current practice among African households, but they have not received the necessary recognition and support from their governments which up to now had been obsessed with "large-scale" farming. For industry the implication is that the work force should be established such that it gets specialized and earns enough to reproduce itself consistently as industrial labour. In either case dispensing with

labour migrancy seems to be a necessary condition. Better prices for agricultural commodities would evidently reduce the need for households to export labour in exchange for wages. FAO, like all the other international agencies, is very strong on the question of higher prices for agricultural producers but, typical of the international agencies, is silent on the question of wages, including agricultural wages which might be the clue to the so-called shortage of agricultural labour in Africa. FAO's theory of "urban bias" obscures the fact that the majority of urban workers are poorly paid and have to supplement their income by reverting to the countryside at regular intervals, instead of providing a steady market for the rural producers.

Refutations and Prospects for a New Agenda

A number of conclusions can be drawn from the review of the FAO report and can be summarized as follows:

1. Price Policy and Subsidies: As had been remarked, the FAO report is strongest on this point and is definitely an improvement on the callous capitalist dogma of the World Bank and the IMF. On their own, market forces are likely to benefit neither the majority of the African agricultural producers nor correct any historical imbalances African economies might have suffered. In the transitional stage African agricultural economies cannot do without subsidies for the benefit of the disadvantaged producers and the poorly paid urban majority, something which is lost sight of in the "urban bias" trajectory of the FAO experts. A few things are implicit in this proposal: (i) it gives some protection to African farmers, whose vast majority is uncompetitive and is not going to be in the foreseeable future but which can certainly produce more under favourable conditions; (ii) it improves prospects for the development of a domestic market by making it possible for the urban majority to be effective consumers of locally produced foodstuffs; and (iii) it narrows down the gap between resource use in agriculture and local needs. As the FAO experts so correctly observe, this deserves a certain amount of flexibility and level-mindedness among the policy-makers. The guiding principle here is optimisation rather than maximisation.

2. Trade and Competitiveness: Here comes a contradiction. Competitiveness implies concentration of capital and a high foreign exchange component. Under present conditions in Africa and as experience has shown, this entails discrimination against the multitude of small producers. This throws us right back to the problem of

uneven development and inequity. This is apart from the fact that the state of international markets for agricultural commodities is such that it fore-closes any dramatic gains by African farmers who have more or less collapsed under the present recession. This has happened in spite of any "comparative advantage" the FAO experts might wish to bestow upon them.

No sensible person would like to argue against trade, whenever possible. But export-led agriculture is in the final analysis a liability for underdeveloped countries. After all, there are examples of agricultural economies which developed, without relying on exports e.g. Japan, South Korea and Taiwan. But all these were marked by rapid industrialization in conjunction with the agricultural revolution. The implicit assumption in the FAO report that agriculture in Africa will be both a source of primitive accumulation and foreign exchange is probably unwarranted and could lead to a repetition of the same strategic mistakes as have occurred before. Sector analysis predispositions notwithstanding, the dynamic link between agriculture and industry might prove crucial for African development. The main objective should be increased self-sufficiency, nationally or regionally, rather than any great ambition to capture international markets which seems to be a far away cry. If finance is put up as the immediate barrier to "walking with two legs" in Africa, then the African governments might like to account for the public debt of more than 100 billion dollars they have incurred in the meantime, without being able to point to any real progress in agriculture or in industry.

3. Technology and Multinationals: Perhaps, an important distinction exists between an engineer's and a social scientist's conception of technology. It is apparent that either out of positivist predilections or out of deference to official policy, the FAO experts are inclined towards the former. Technology is not a package of useful means to an end. It is rather a complex system of communication about things or means of livelihood in different structural, social and cultural settings. As the FAO experts are quick to point out, all the technological innovations they recommend for Africa have been there for some time. But the question they are not able to answer socially is why have the Africans by and large failed to embrace them? If the purpose of production is at issue from the structural point of view (may it be state or class exploitation), then any communication about instrumentalities of production is blocked. An extreme example is Southern Africa, the Africa of "labour reserves", where initially the local producers responded enthusiastically to capitalist innovations and are now depressed, unresponsive and their

development. Romantic ideas about traditional crops by people who do not eat them might be an unwarranted excuse for double standards. Likewise, unillustrated assertions about "demonstration effect" might be part of a self-fulfilling prophecy by westerners. The peoples of the East have proudly maintained their dietary habits, despite contact with the West. In little Lesotho one of the most popular specialities in Western-style hotels is what is called "the traditional". In Ethiopia there is nothing to beat "enjera and wot" among all classes. In West Africa fufu and traditional stews still hold sway. So, it is not as if coca-cola and hamburger or hot-dog is the climax of all culinary tastes in the Third World. We still have to know what people eat and appreciate in their own context.

4. *Land and Land Tenure*: Related to the foregoing discussion is the question of land use and local needs. By any standards, Africa has an adequate supply of land i.e. enough to feed itself within the foreseeable future. Second, African households have very strong use-rights over land. Insofar as this is true, African customary land tenure systems guarantee greater access to land by potential producers than most systems in the modern world. Unhappily, all this is befogged with all kinds of capitalist prejudices. The FAO experts manage to overcome some of these, but their knowledge of African land tenure systems and grasp of their dynamics under modern conditions is open to doubt. In the appropriate section (pp. 57-58) there is tremendous confusion between the dynamics of land tenure and the dynamics of land use. For instance, demographic pressure could lead to land fragmentation even under individual land tenure, if the system of inheritance is such that each child is entitled to an equal share of their father's land. In contrast, under African customary tenure new claims are not on land that is already under use but on land that is presumed to be vacant.

However while incorporation of marginal soils might precede fragmentation of existing plots, restriction on size of future plots or redistribution from existing plots is not peculiar to African customary tenure. Kenya and Zimbabwe, which are erroneously quoted as "successful" in the FAO report, are a case in point. It is true that at first the redistribution of the Kenya highlands estates seemed successful. But as was reported earlier, there are now big question marks (see Odingo, *op. cit.*). In Zimbabwe there is as yet nothing to be described as a "success" in the redistribution of land (see Moyo in Mandaza, 1986; pp. 165-202). In several African countries consolidated plots and estate farms held under individual titles are getting refragmented because of both demographic pressure and revived

household economy is threatened with complete disintegration. If less acute, the same trend is observable elsewhere in sub-Saharan Africa and it will take more than the best technology to reverse it.

If the requisite social and structural conditions are met, then the FAO experts are right in emphasizing intermediate level technologies such as fertilizers, pesticides, animal traction or moderate tractorisation, all of which still have a great potential in Africa. But then the FAO experts give themselves away when they recommend participation of TNCs in these operations (*op. cit.*, p. 66). Is this not the same story of the shark and the sardine? Given the experience in Latin-America and Asia, and the refusal by the developed countries under the leadership of the United States during the UN Conference on Technology and Science in Vienna in 1979 to adopt an international code of conduct for the TNCs recommended by the Group of 77, what would be the justification for the even weaker African states for putting themselves in the hands of such rapacious agents? If indeed, as is acknowledged by FAO, some of these views were shared "by the African scientists, economists and planners who attended the Director-General's Expert Consultation held in Rome in December 1985", then the African constituency at large is entitled to know who those were because in the drafting team only one African name appears. In the meantime, it is worth noting that most of the research that has been done on multinationals in Africa has come up with negative or pessimistic findings. This includes policy documents by the ECA (see *Multi-National Corporations in Africa*, ECA, 1972).

All this does not eliminate altogether prospects for high technology in agriculture in Africa. However, this has to be evaluated realistically. As the FAO experts affirm, the potential for irrigation at 10 percent, compared to 30 percent in Asia, is low. Consequently, the prospects for a green revolution Asian-style in Africa are very deem, indeed. This is even more so when we consider the cost of any major effort in that direction. Research into drought - and heat-resistant strains seems to hold the best prospects for the continent. As this is not part of the technological software of the West, Africa will of necessity start from a low base. More resources and scientific capacity will have to be devoted to the task. In doing so a few observations will have to be borne in mind.

First, so far drought-resistant strains are not associated with opulence. Second, there is the question of taste over and above survival. While crops such as cassava might offer the best prospects for survival, their unpalability disqualifies them as an item for

customary claims as a response to a deepening agrarian crisis.

All this as it may. The most critical question that needs to be answered unambiguously is whether or not the retrogressive nature of African agriculture is attributable to customary systems of tenure. While the FAO experts acknowledge that:

"In the past, this system responded well to changes in population and to commercialisation of production. Moreover, and contrary to the view often expressed, customary tenure does allow for inheritance and does provide sufficient security to encourage investment by recognizing individual rights to improvements and to continued occupancy during usage" (op. cit. p. 57),

they nonetheless jump to the conclusion that "Unfortunately, the traditional form of customary tenure is no longer sufficient in many countries" (*ibid.*). Demographic pressure is seen as the root cause of this and excessive fragmentation as the end result. But, what would have been the alternative under individual tenure? One of the virtues of African systems of land tenure is to guarantee access to land by every household. The alternative to fragmentation is consolidation and enclosures. The inevitable result, as is known, would be landlessness. Therefore, the natural choice is between fragmentation and landlessness.

Socially and economically, both are unsustainable but inevitable under the present conditions in Africa, where neither capitalist agriculture nor industry has become dynamic enough to bring about the necessary structural transformation in the whole economy and absorb the surplus population. This is the essence of the so-called economic crisis in Africa. In the circumstances it would be anti-social and politically unwise to insist on capitalist enclosures in agriculture. The FAO experts are perfectly aware of this and concede that traditional institutions and practices "... could remain the central element in a modified and more up-to-date system of land tenure that could meet the challenges of commercialization and shortage through mechanisms other than privatization or other legislated intervention" (*op. cit.*; p. 58). In other words, reform in African agriculture need not follow a capitalist path. But then, what path?

Here, the FAO experts limit themselves to some perfunctory remarks such as: "The modifications might include greater community

responsibility and management of land use as the traditional, merely allocative role is reduced" (*ibid.*). Consequently, we are at a loss as to whether the experts are merely equivocating or do not know what they are talking about. As was mentioned previously, management of production in Africa is not community-based. Rather, it is in the hands of individual households, whose first allegiance is to their lineages with whom they share certain corporate rights and on whom they depend for political and ritual protection. The village head is able to hold together the village as a social and political community only insofar as he enjoys the support and the confidence of these lineages. Therefore, any attempt to integrate production at the territorial or village level poses a threat to these groups. Although it has never been fully studied, this seems to have been one of the problems of Ujamma villages in Tanzania. Bajamaa agreed to pool resources in the form of land, labour and technical inputs from the government but insisted on the right to individual appropriation for the benefit of their lineages or extended families. This interfered in no mean way with the processes of accumulation and reproduction within the Ujamaa villages.

Therefore, if what the FAO experts had in mind was village producing cooperatives, using the common pool of land in which everybody has theoretically use-rights, then this cannot be taken for granted. Zimbabwe has taken the chance of organizing settlement schemes and producing cooperatives on the basis of individual need i.e. those who have access neither to land nor to wage employment. One knows in advance that even in the case of Zimbabwe the recruits will treat themselves as inter-changeable with their brothers and cousins, which implies an incipient reversion to the kinship principle. This has to be expected because to most sub-Saharan Africans kinship is the ultimate source of security and major principle of social organization. The present ambiguities and uncertainties in the still neo-colonial African economies make it almost impossible to abandon this principle. If in the meantime it is agreed that as a matter of expediency the African redistributory mode of organization and production in the rural economy has to be sustained, then it has to be indicated in what precise form this has to be done.

5. Local Institutions and Popular Participation: The FAO experts rightly fear that the term, "people's participation", might degenerate into a cliché among international agencies as well as donors. But they themselves do not go very far in forestalling that possibility. One of the reasons for this is that their liberal community development approach glosses over a number of potential or actual contradictions in

what they propose. First, there is an underlying contradiction between bureaucratic institutions and popular institutions which revolves around control over resources and their ultimate use. Under the aegis of "institution-building", African governments are intolerant of independent initiatives by local communities. This dates back to colonial times when local communities and popular institutions were a source of resistance and, consequently, the colonial authorities found it necessary to undermine or to pervert them. Secondly, under the impact of "modernisation theories" in the 'fifties and 'sixties, governments tended to regard traditional, local institutions as an antithesis of progress or development. As such, they had to be replaced with supposedly superior bureaucratic institutions. Therefore, the marriage that the FAO experts propose between bureaucratic and local institutions implies a radical change in outlook which goes far beyond liberal suppositions about community development.

The second contradiction is that, contrary to the image the FAO experts project (*op. cit.*; p. 59), African villages were not characterized by "informal traditional structures" nor did they "often have no official status". During the colonial period African chiefs, headmen and councils of elders were recognized under both indirect and direct rule and were used to contain the population and to reduce administrative costs. After independence African governments accepted this as a more or less de facto situation, though they, as nationalists, had very little time for chiefs and local institutions. They were, instead, keen to reproduce the state bureaucracy as quickly as they could. This meant that, while recognized and continued to operate in a rather attenuated fashion, traditional structures and institutions largely suffered neglect. In other words, while being undermined, they were not being transformed progressively.

Now, in the wake of the present crisis and as rear-guard action, there is a desire to revive them. The FAO experts believe that "the most appropriate basic unit of action is the village". But where? Experience from black Africa would cast doubt on this claim. While it is true that under the system of headmen each village is an administrative unit, what distinguishes black Africa is the fact that production is not managed by the village authority. It is the responsibility of individual households, which are affiliated for purposes of circulation and social reproduction to particular lineages of which the headman himself is a member. It is conceivable that for purposes of "projects", like public works, villagers can be mobilized on an ad hoc basis. But for normal year to year production, things might prove different and difficult. Reference has already been made to

the underlying organisational incompatibilities in the Tanzanian ujamma villages. The search for appropriate units of production in Africa must continue because it is apparent that no economic development can be achieved on the basis of projects, no matter how well conceived they are. While international agencies such as FAO may insist on it, there is no evidence of such happening nor any indication that it might happen in the future. However, if projects are only ameliorative, then they cannot be pushed as a matter of national policy or priority.

Finally, the third contradiction in the idea of using villages as units of production, overlooks conflicting class interests in the villages themselves. In our survey we distinguished between estate farmers, commercial farmers and household farmers or small-scale producers. We also indicated their differential access to political power and public resources. Therefore, a mere reference to "village community" does not tell us which class or category is being sponsored as part of an overall strategy for national development. One is cognizant of the fact that there is a growing emphasis among international agencies and donors on small-producers as the foundation for agricultural development in Africa. This is more than a simple bureaucratic injunction. It is a repudiation of the capitalist approach and is bound to meet with resistance from the privileged classes which are better represented in the power-structure of most countries. The few African countries which have dared to take the bull by the horns got very hard knocks, nationally and internationally. As of now, they are sipping tribulation with a spoon of sorrow. Then, the question is: which African government would willingly promote a peasant rebellion against the status quo?

If on the other hand, what the international community is interested in is not an agrarian revolution in Africa but some petty reformism to stave off starvation and famines, then village projects and some pottering around by the people in the name of "participatory democracy" are in order. One would even surmise that in the African case governments could afford a certain amount of spontaneity in re-settlement schemes and in selection of working partners. Those who choose to live and to work together, be it on a kinship basis, could be granted the right to do so, without affecting the system. The nagging question, however, is whether all this would solve the basic problems facing African agriculture, which is neither traditional nor capitalist in the historical sense. If cooperation is seen as the ultimate solution to the problem of increasing land scarcity and technological stagnation, what will be the future of African lineages and

households? What would replace their social welfare function among affiliated members? These are the questions which very few Africans are unaware of but which they hardly address because they do not feature in the agenda of those who advise them.

6. *Women and Agricultural Development*: Of late, this is a much debated topic in African development studies and tends to be highly emotive. Even so, more could have been said in the FAO report, especially under "manpower" and "people's participation". The point is that the popular demand to treat women as a special category could be prejudicial. For instance, the often-quoted predominance of women in agriculture in sub-Saharan Africa is persistently used as a justification for paying more attention to female producers, without raising at all the question of whether or not this should be an accepted division of labour in contemporary African societies or what its historical significance is. Paying more attention to female producers would not eliminate possible injustices within the division of labour itself. Indeed, there have been complaints (Women and Development Division, FAO) that women continue to be over-worked precisely because they have no access to labour in the same way as men. Here, there is a conflation of two issues, class and sex. If women object, as they must, to the exploitation of their labour by men, they cannot at the same time uphold the right to exploit other people's labour. If what is at issue is the monopoly by some men in the modern sector to hire labour, then the problem is access to resources which affects almost as many men as women outside the modern sector. Naturally, this excludes those women who happen to be labour employers. Otherwise, the argument could inadvertently become sexist in the opposite direction or be capitalist unconsciously, which would be prejudicial.

The other complaint from the same quarter is that women do not have access to "good land". This is puzzling because, if women are denied good land, then the men to whom they are attached suffer the same disability since it is their tenure which determines women's access. Even if men do not cultivate the land themselves, it is difficult to imagine that they would be indifferent to the quality of land they receive on behalf of their households. But if the issue is women's land rights at all under customary tenure, then the case is clear. The fact that women do not have direct and independent tenure is one of the most serious drawbacks of African customary tenure. Feminists tend to treat this as a problem of both patriarchy and gender within the lineage system in Africa. Analytically, this might not be the case since the lineage structure in Africa is independent of sex i.e. there are both matrilineal and patrilineal societies. In the circumstances we cannot

logically speak of "patriarchy", without reference to "matriarchy".

Although some pioneers such as Claude Meillassoux (1960, 1964, and 1972) have made it appear that in the process of social reproduction of lineages in Africa it is always women who are exchanged for prestige goods such as cattle, in matrilineal societies, which coincidentally are not cattle herders, not only are men exchanged but they have to give prestations and services to their brides' matrilineages. However, from the point of view of gender, the subordinate position of husbands in such societies is not accounted for so much by the position of women but rather by the power exercised over them by their maternal uncles and nephews. It would appear, therefore, while patriarchy is strictly a problem of patrilineal societies in Africa which predominate, gender seems to be a universal feature of family organisation. In the past the term "family" has been used as synonymous with "domestic groups" and at times with "households". It is apparent now that common residence need not coincide with a common budget or marriage relations. There is, therefore, value in restricting the term "family" to those groups which are characterized by conjugality and filiation, irrespective of whether they encompass one or two generations.

The critical relationships in such units are: husband/wife, parent/child, and brother/sister. In traditional African society these represent a hierarchy in favour of men which culminates in control over means of livelihood e.g. land and cattle. Guardianship over wives, widows and unmarried sisters follows the same pattern. All these create a predisposition towards appropriation of the fruits of the labour of women by men. The same principle does not necessarily apply to households which might be headed by either men or women and whose composition is extremely variable. There is a general, unqualified belief among feminist researchers, which is echoed by the FAO experts (*op. cit.*; p. 57), that female-headed households are usually poorer than households headed by men. In all probability, this is statistically true. But it does not say what percentage of male-headed households are equally poor because of lack of access to similar means of livelihood.

In those matrilineal societies in which marriage is uxorilocal i.e. the husband joins his wife's matrilineage, the rights of husbands in land are extremely tenuous, compared to those of their wives who belong to the land allocating group. Similarly, in patrilineal Botswana it is those women who are not attached to men who have an opportunity to own cattle, the most valued possession, in their own

right. Finally, in West Africa, market women who tend to head their own households separate from their husbands, have avoided deprivation precisely by opting for such an arrangement. These examples are a sufficient indication that, if the problem of gender is endemic in African family structures, it is not *per se* a problem of households. This is an important observation because, conventionally, "family" and "household" are presumed to be coterminous. A separation between the two holds out possibilities for creating production units, independently of conjugal ties or principles of consanguinity. If such groups reproduce themselves progressively, then some of the problems of gender and patriarchy in African family and lineage systems could be by-passed. Equal access to means of livelihood and the full right of disposal over the value of one's labour are the only condition which seems to be both necessary and sufficient.

Labour and Wages

As is recognized, there is tension between the process of alienation of labour and of accumulation of value. In a situation in which most of the producers are not deprived of access to means of production and where wages are low as a result of the requirements of the process of primitive accumulation, the problem of unavailability of labour or of labour supply is bound to assert itself. Somehow, this eludes the FAO experts. They talk about labour shortages in African agriculture, without being able to explain it. Yet, it is obvious that African households which still have reasonable access to land or cattle will try to retain as much labour as possible or, conversely, will not release labour to other production units unless the returns seem to warrant it. The abandonment of unproductive agricultural plots in favour of labour migration and the shunning of farm labour are two sides of the same coin.

Accordingly, it must be recognized that improvement of chances for self-sufficiency among households in African agriculture implies either a decline in the rate of labour migration or increased rates of payment in the centres of employment. It also puts the would-be-capitalist farmers in direct and immediate competition with urban/industrial employers. For those who, like the FAO experts, believe in "unduly high urban salaries", this creates a problem of "structural adjustment". But for those who associate development with increasing social equity, the problem is how to combine consumption with production. This is not so much a problem of rural-urban differences, as the FAO experts are inclined to think, but of a dynamic exchange between agriculture and industry in terms of both labour

value and commodities. Thus, it has to be decided as a matter of national policy what is going to be the basic unit of production in agriculture which matches the factory in industry in which labour is largely socialized. All these unanswered questions and contrary deductions mark the limits and foibles of bureaucratic and abstract social science, which is part of the craft of international experts. Even so, there is no immediate reason why FAO, as a specialized agency on food and agriculture, should have allowed itself to be over-shadowed by the World Bank on the current debates on the agrarian crisis in Africa.

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RESUME

L'Afrique traverse une crise politique et économique d'une gravité telle qu'elle a attiré l'attention des organismes internationaux et de leurs "experts". Il est désormais manifeste que contre toute attente, l'idéologie des experts étrangers et leur culture intellectuelle compliquent le problème africain au lieu de les amener à procéder à une réévaluation critique de celui-ci en ce sens qu'ils se réfugient derrière de vieilles hypothèses et théories de développement jugées fiables à l'époque; ce qui revient trop souvent à louer les mérites de la théorie et de la pratique bourgeoises. Par ailleurs en se faisant passer pour les seuls à disposer de connaissances valables, ils font perdre aux connaissances africaines leur valeur. Cette attitude englobe inéluctablement les chercheurs africains que l'on estime donc incapables d'avoir des connaissances expertes. C'est là l'une des tragédies du système international d'aide extérieure et d'"experts" étrangers.

L'article exhorte les universitaires africains à faire preuve de vigilance et à ne plus "consommer" tout simplement les connaissances reçues. Pour ce faire ils pourraient, en se fondant sur leurs propres connaissances acquises sur place, soumettre les prétendus rapports d'experts à un examen critique, seul moyen pour eux de parvenir à la vérité et de révéler aux populations africaines ce qu'on leur cache. Une telle attitude appelle cependant une bonne connaissance préalable de la situation locale et une forte sensibilité aux besoins et aspirations des populations locales. Cela nécessite aussi que les universitaires africains laissent tomber l'épistémologie des sujets et des objets lorsqu'ils produisent des connaissances à des fins de développement social et qu'ils écartent l'instrumentalisme des agences internationales, qui tente d'isoler les facteurs techniques des facteurs sociaux.

La totalité des rapports rédigés depuis peu sur l'Afrique, notamment ceux de la Banque Mondiale et du FMI contiennent des exemples illustrant bien notre propos. C'est cependant le rapport de la FAO intitulé l'Agriculture africaine: les 25 prochaines années, qui est le plus édifiant du point de vue du développement agricole. En effet l'accent y est placé sur les facteurs techniques et physiques. Les institutions sociales en Afrique y sont mentionnées, bien sûr, mais la plupart de celles-ci sont perçues de façon erronée du fait même que leur dynamique interne ne soit pas correctement appréhendée. La lacune la plus perceptible apparaît néanmoins au niveau de l'étude des rapports sociaux dans les sociétés agraires en Afrique; capital et travail d'une part et répartition du pouvoir politique et extraction de surplus d'autre part figurent respectivement dans ce rapport sous la forme

"absence de main-d'oeuvre agricole" et "tendance dans les villes". Or il ne fait aucun doute que l'un des éléments sous-tendant la crise qui sévit actuellement en Afrique c'est le problème de l'exploitation des classes et de la domination politique. Nous avons là la preuve qu'il s'avère indispensable de revoir les relations politiques et les rapports de production en Afrique. Sur le plan théorique cela signifie qu'il convient de réviser les hypothèses en vigueur concernant l'orientation du développement de l'agriculture africaine et son objectif. Pour la FAO c'est un fait que l'agriculture africaine est marquée par l'accumulation capitaliste d'une part et par le développement de rapports capitalistes de production d'autre part. Compte tenu de la réalité africaine ce postulat se justifie-t-il?

THE CRISIS OF THE NEW INTERNATIONAL DIVISION OF LABOUR, AUTHORITARIANISM AND THE TRANSITION TO FREE-MARKET ECONOMIES IN AFRICA

Eboe Hutchful*

It is easy enough to agree that Africa is in crisis. The problem however is to grasp the specific character of this crisis and the political movement which it is calling forth. Structurally, the constitutive elements of this crisis are as follows:

- a) an underproductive semi-industrial sector organically linked to and replicating imports;
- b) stagnation of domestic agriculture, reflected in growing food imports;
- c) a typically perverse combination of high domestic demand and agricultural stagnation and industrial recession, coupled with a balance of payments crisis - denoting an industrial structure incapable of responding to growth in domestic demand except via the balance of payments;
- d) a foreign trade regime marked by the maintenance on the one hand of a simple primary export structure and the increasing domination of a single export commodity, and on the other by the reconstitution of imports towards capital goods, raw and intermediate inputs and food;
- e) increasingly acute fiscal problems of the state (expressed in deficit-financing) following a period of state-led accumulation based on the taxation of foreign trade and of agricultural and mineral exports in particular;
- f) domestic inflation derived from c and e); and finally
- g) a large and increasingly unmanageable external debt.

To these elements must be added their political and social dimensions, such as the extensive interventions, regimentation and social controls associated with the "development initiatives" of the African state: decay of the once-vibrant countryside and destitution of the peasantry; growth in the surplus population and enforced idling of large sectors of the population; and a corresponding expansion of informal economies and "bazaar" activities, etc. Finally, linked to this crisis is the generalization in Africa of a particular set of corrective policies, the "adjustment programmes" associated with the international lender agencies.

The elements delineated above define a particular form of crisis, arising from the partial reconstitution of the world market and the emergence of a "new" international division of labour, characterized by semi-industrialization in the peripheral countries. It is necessary to stress that although the type of development associated with these structures typically commences from a colonial economic base, it is not reducible to this point of origin, neither does it constitute its inevitable or even logical product¹. On the contrary it constitutes a distinctive new economic conjuncture. And indeed a glance at its principal elements should suffice to demonstrate the distance between contemporary African economies and the colonial "economies of innocence" with their limited public sector, absence of semi-industrialism and of debt and balance of payments complications, and low inflation rates. These differences should probably not be overdrawn; there are strong structural continuities, largely of a negative character, such as the backward nature of agriculture, the lack of articulation between industry and agriculture (now "domesticated" as a feature of the local economy) and between the structure of demand and the domestic resource base, and structural impulses to continuous expansion of the idle population. Nevertheless what we have here is neither simply "neo-colonialism" nor "stagnation", the latter concept in particular tending to disguise or understate the sheer extent of structural transformation which has been attempted in the African economies. (On the other hand that concept is probably useful as applied to sectoral composition of GDP, which has remained relatively unchanged over time in most African economies, in defiance of the mass and rationale of investment).

In my view the present economic crisis in Africa should be situated in the contradictions of the "new international division of labour" (NIDL) and the internationalisation within the African economies of the form of the reorganised world market. This is not

therefore to attribute an "external" origin to this crisis, since in any case the initial impulse for these transformations on the world market originated to a large extent from within the African and other underdeveloped economies, and were associated specifically with "independence". Neither is it to suggest that every element in the present crisis can be attributed to such a structure, or to imply a uniform level of development or success of this structure in all African economies. It is also necessary to emphasize the differences in the political practices and ideologies underpinning these structural changes. Nevertheless in the end one must agree with the World Bank regarding the "extraordinary degree of similarity throughout the (African) region in the nature of the policy problems that have arisen, such as in rural development, trade and industrialisation, and in the national responses to them" (World Bank 1981, p. 1.2).

In relation to Africa the emergence of the new international division of labour (NIDL) involved the following:

(a) The particular effectivity of the political², related to changes in the global balance of political power, in the restructuring of the world market. In other words the changes affecting Africa's place in the world market were to only a limited extent the product of the economic logic of capital, in spite of the many favourable new conditions that emerged for multinational corporate investment in the area of semi-industrialisation. The crucial condition was rather political; the political autonomy associated with decolonisation, and the widespread use of tariffs and other instruments of state policy, induced strong changes in the nature of the market, particularly as far as new patterns of corporate activity were concerned². However unlike the case in export platforms which were primarily a means to enhance competitive ability on highly competitive international markets (thus making cost reduction crucial), the multinationals involved in import-substituting industry (ISI) produced for captive markets under restrictive regimes with direct and indirect administrative pricing, and thus had no incentive to cut costs, to revolutionize production techniques, or to introduce appropriate products. Hence their activities entrenched certain inherently regressive features;

(b) The political and economic ideologies that fostered these transformations were strongly interventionist and incipiently authoritarian. But they also emphasized a certain element of redistributionism, expressed in varieties of "socialist" and "non-capitalist" ideologies. While these ideologies were frequently mere instruments of legitimation, welfare spending and various types

of social subsidies nevertheless did form a large proportion of budgetary expenditure in most African countries. The expression of redistribution at the political level was the prevalence of clientage and corporatist networks and practices. The result was the emergence of broad coalitions of diverse social interests with a direct interest in the economic practices of the state;

(c) Although the (redefined) division of labour that emerged was "new" in the sense that it introduced previously absent element into the productive structure of the underdeveloped countries, and "international" in the sense that it occurred within the framework of a fragmentation of social labour on a global scale (much of it via the large international corporation), seen from another point of view, it was far from being "international". On the contrary it was riddled with barriers and national/regional particularisms. Since the genesis of the NIDL lies, as far as most of the underdeveloped countries were concerned, in politically-inspired restrictions, its advent constituted less a "freeing" or expansion of the world market than an intensification and diversification of restrictive trade practices. From this point of view decolonisation did not lead to the deepening of the world market in the manner anticipated.

While this "rupture" with the world market was a necessary precondition for local industrialisation, the inflationary and "unbalanced" growth strategies involved meant that local production costs were inevitably higher and did not reflect "market efficiencies". At the same time however the notion of "market efficiency" did not have much meaning in this situation since the objective was the restructuring of the market itself, both domestically and globally. The cost discrepancies between the two market levels even aided the process of semi-industrialisation since it was realised as an effective subsidy on domestic industry, and was tolerable (at least in the short term) as long as the objective was that of establishing an integrated national economy rather than one merely integrated via the operations of large global corporations. The basic contradiction however was that while these strategies insisted on unilateral restructuring of world market "rules" to the advantage of the local economy, they remained extensively dependent on the world market for means of production while at the same time discouraging exports. This situation sooner or later provokes a balance of payments and debt crisis.

In theory at least there are several options in responding to such a crisis. One is by acting progressively to eliminate the "structural dependence of reproduction" implicit in ISI by developing the

domestic intermediate and capital goods sectors. A second approach, in theory not inconsistent with the first but in practice difficult to reconcile with it, is to close the gap between local and international production costs through currency devaluation, abolition of fiscal and trade barriers, and reductions in labour costs— in effect the reabsorption of the domestic into the world market. This is the approach favoured by the international lender agencies. Although the formal objective of this approach is to stimulate competition and hence efficiency, in the circumstances of the weaker industrializing countries it is associated in practice with several biases: against self-reliance; against industry and in favour of primary (particularly agricultural) exports; and finally against domestic (particularly state) capital and in favour of foreign capital.

(d) Unlike Latin America the crisis associated with the NIDL and ISI in Africa is not indicated by a "deepening" of the structure and the inauguration of more complex phases of production (capital and intermediate goods) (O'Donnell, 1978, Hutchful, 1984). Unlike Brazil and those other Latin American countries where the initial phases of ISI led to specular expansion in industrial output, in Africa this did not occur and only a few countries have successfully executed the preliminary stages of ISI; none can be described in any serious sense as being in transition to a more complex intermediate stage. Far from being a victim of its own successes, the crisis of ISI in Africa manifests itself as a profound retrogression and collapse of the productive structure. The striking legacy of ISI policies is the extent to which they have provoked the degeneration of agriculture and the exhaustion of state-led accumulation without, at the same time, successfully consolidating even the primary stages of industrialisation. It is in this problematic transition that Africa's "structural crisis" may be situated.

An obvious connection can be drawn between the various elements of the crisis - severe inflation, unemployment, balance of payments problems etc. - generated by this specific structure and the militarisation of the state apparatus in Africa. But I think the present problem goes much beyond that. The new directions of authoritarianism emerging in Africa must be linked at least as much to the proposed solutions to the crisis. The various donor and lending agencies and Western governments are making no secret of their view that extensive reorganisation of Africa's productive structure and corresponding social-political conditions is required to deal with the present crisis. Schultz, the American Secretary of State, has demanded a "total restructuring of African economies" while stressing the

"importance of establishing a stable political climate" [New York Times, May 29, 1986]. Hans-Dietrich Genscher, Federal German Foreign Minister, has also invited African leaders to "undertake fundamental changes". These demands for change however narrow down to a demand for the restoration of free-market economies. This position is repeated endlessly by the international lender agencies. In this regard Schulz has praised the "new willingness" of African leaders to "employ market-oriented measures in dealing with their economic difficulties" (ibid). The argument in this paper is that the extensive restructuring required to restore African economies to the mechanism of the market after a period of interventionist development strategies will inevitably generate severe political difficulties which can only be contained through authoritarian politics. These difficulties can only be enhanced by the specific power relations conditioning the present process of reform in Africa.

Indeed these authoritarian possibilities are not denied by the principal advocates of market solutions. On the contrary it is fairly readily recognised that the (re) institution of market mechanisms in Africa will require exceptional political conditions. In a recent article The Economist has admitted that turning to the market will require "extraordinary political nerve" on the part of African leaders [June 26, 1984: p.40]. The World Bank also implicitly recognises this in the critical emphasis that it places on "political will" for the success of adjustment programs. For instance an African government which accepted a very large devaluation of its currency and adopted very abrupt market policies was praised for its "great political courage". (It is worthy of note that the government in question was a military government; the move nevertheless almost precipitated its overthrow).

These comments allude to the political context of the crisis within which "economic reform" must take place in Africa (and indeed in the underdeveloped capitalist countries as a whole) in the present phase, and require to be elucidated in the context of a broad theoretical understanding of the relationship between the capitalist state and crisis. The need for periodic reorganisation of the social conditions of production is not peculiar to Africa but general to capitalism as such. This reorganisation is required to eliminate the barriers to accumulation that rise out of and are endemic to the process of capitalistic production itself, and which express themselves in falling rate of profit and in structural tendencies toward stagnation and crisis. [Hirsch, 1978] This reorganisation occurs, in the first instance, at the immediate level of production where the individual capitalist or firm restructures his or its operations, eliminating excess labour and waste,

introducing new, more efficient machinery and methods of management. A similar process of reorganisation also takes place however at the "macro" level of the general social and other factors that condition accumulation, initiated not by the individual firm but by the state as the "collective capitalist". This consists in the intervention of the capitalist state in the market place, in the mode of deployment of its monetary and fiscal powers, in its education and research functions etc., as well as in its mediation of the struggles arising out of the reorganisations of the immediate level of production, i.e. class struggles.

While this process and the corresponding state functions are endemic in capitalist society as such, in the underdeveloped capitalist economies it occurs and - particularly in the present context - must occur under fundamentally different conditions [Hutchful, 1986]. In the advanced ("autocentric") capitalist economies reorganisation takes the form principally of further technological transformations in the labour process, with the "technology industries" constituting the principal site of adjustment, and a corresponding rise in relative surplus value ("productivity").

But the (arguably) decisive element is not located at this level, but rather at the level of "politics". Here it occurs under "hegemonic" political conditions and is mediated by and within the institutions of parliamentary democracy and suffrage. This allows the working classes institutional representation of their interests and imposes political limits on the reorganisations at the economic level. A "purely economic rationality" therefore cannot be realised. This mediation on the one hand perpetuates the crisis at the economic level and prevents (on the side of both the state and the individual capitalist) the formulation of adequate responses to the problems of accumulation; on the other hand however by giving determinancy to the class struggle it deters the emergence of extreme political conditions. Thus the key to the reorganisation process is precisely the mode of articulation of its economic and political moments³. While placing political limits on the bourgeoisie, the hegemonic ideology yet reassures its economic dominance - and even gives the working classes a certain measure of self-interest in "economic reform" - through the fundamental notion that the "most favourable condition for wage labour is the most rapid expansion of productive capital". [Marx]

On yet another level the process of reorganisation involves a certain ordering of the hierarchy of interests of the competing bourgeoisies on national and international markets, so that while the

common interest of all bourgeois fractions in expanded reproduction is reflected in this process, primacy is given (except in moments of acute crisis or dislocation) to the particular interests of the national bourgeoisie. Nevertheless Hirsch [1978] has correctly emphasized the "crisis-ridden conditions" under which the reorganisation functions instigated by the recurrent difficulties must be performed - particularly in the present anarchic world market conditions. This need not imply the cataclysmic "end" of capitalism, for indeed it is also these crises and the countervailing transformations to which they give rise that constitute the systemic dynamic of capital.

Several reasons may be advanced to explain why this process of reorganisation in the peripheral economies must follow a fundamentally different trajectory. These include the impossibility (owing to the very different economic structure) of the type of technological transformations which characterize the mature capitalist economies, and the need therefore for direct and often brutal reduction in the effective wage rate; the weakness of the "normal" instruments (fiscal, monetary etc.) of state intervention associated with recessionary phases, partly because of the lower capacity and efficiency of the state organs and partly the inherent limits of these traditional instruments in economies characterized by large "bazaar" sectors and informal transactions. Particular significance must however be placed in the present context on the prevalence of monetarist ideologies: first on the assumptions of monetarism, which conceives of the "market" in abstraction from its political determinations and renounces any role for political class struggle - or any political considerations for that matter - in its conception of economic process and reform; secondly, on the sources of these monetarist ideologies, which are due entirely to the growing influence of the international lender agencies (the IMF and the World Bank) and the foreign banks. This popularisation of monetarism is indicative not only of the direction of economic-level transformations but also constitutes the determinant political-ideological context for "economic reform" in Africa.

In particular, the following must be emphasized:

(a) the almost exclusive dominance of the interests of the international bourgeoisies, particularly the financial fractions, and the subordination of the interests of the domestic bourgeoisie in the reform programmes of the international lender agencies.

(b) the strict separation between the economic and the political

in this process, in a dual sense: first between the interests dominant at the economic level of political management; and secondly, in the form of (neo-classical) ideologies that assume the autonomy of the market and deny reality to politics and the class struggle;

(c) finally, the bureaucratised social engineering, as deliberate as it is extensive, and the total exclusion of the large masses of the people in this process, in spite of the very great sacrifices that are being imposed. On no other continent have foreign technical personnel so completely and unquestioningly assumed control of crucial aspects of national planning and administrative processes.

The Economic Critique

The quintessential critique of African development policies is offered by the World Bank [World Bank 1981, 1983]. According to the World Bank, Africa's economic difficulties are due principally to two factors. First, trade and exchange rate policy: overvaluation of national currencies and restrictive trade policies have led to overprotection and inefficiency of domestic industry and at the same time discriminates against agriculture and exports. Second, excessive state intervention and reliance on administrative controls and prices, rather than market mechanisms, have adversely affected incentives, particularly in agriculture. The solution advocated in both instances is greater reliance on market mechanisms. In turn this requires (1) appropriate exchange rate policies (devaluation), which will eliminate the need for cumbersome and inefficient direct controls and stimulate competition; (2) appropriate incentive structures for private enterprise; and (3) a shift in priorities toward agriculture and exports. Although the rationalisation of ISI and the development of industrial export are considered theoretically possible, in my view the emphasis of the Bank on "comparative advantage" reveals a basic anti industrialisation bias.

It is necessary to indicate briefly why these market-oriented reforms are likely to require an authoritarian political framework. The key issue is the abrupt realignment of domestic and international prices which is attempted through a mix of exchange reform, wage reductions, and other fiscal and monetary instruments. These in turn are meant to provide the conditions for abolishing tariff and quantitative barriers and rolling back state controls. The substitution of market mechanisms for direct controls and administrative prices via exchange reform deliberately shifts the weight of incentives from import-substituting industrialists, wage-workers, salary earners and speculators in favour of agricultural and (in theory) industrial

exporters and foreign investors. Devaluation (which is usually massive⁴) functions as a sudden - and substantial - across-the-board wage decrease. At the same time lifting price and distribution controls in the market place tends to have a spectacular upward effect on prices. This realignment should be seen in the context of a de-emphasis in production for domestic needs and consumption in favour once again of export promotion.

Secondly, the shift to export-orientation in turn requires an appropriate wage policy - usually a downward adjustment in wages - in order to establish international competitiveness. This is particularly the case if the export products are expected to compete with those produced by other low-wage areas. (An example of this is provided by the World Bank: according to the Bank African wages are much too high to be competitive on export markets. The choice of countries in this comparison by the World Bank (Pakistan and Bangladesh) was in itself significant. African wages were claimed to be on the average 50% and 100% higher respectively than Pakistan and Bangladesh, two of the countries with the most miserable wage rates in the world.

Thirdly, liberalizing agricultural markets, on which the World Bank lays particular emphasis, has, whatever its merits, potentially profound consequences for the economic base of the state and state bourgeoisies. Since the bulk of state revenue in Africa is derived from taxation of peasant export produce, the abolition of agricultural marketing boards, which is favoured by the World Bank as the ideal solution may indeed "free" peasant initiative and help re-invigorate the countryside, but would also entail serious short-term consequences for the fiscal position of governments⁵.

Finally, the standard demands for leaner government, for reduction of state spending on welfare and subsidies and the insistence that essential services and goods reflect "economic costs" - these require an end to the "redistributionist" political practices that had mediated the gap between rich and poor.

With its comprehensive attack on the whole edifice of ISI policies and on the direct and indirect beneficiaries of these policies it is not surprising that this process of restructuring provokes a broad "coalition of resistance" by interests tied to these policies - domestic industrialists, urban wage workers, civil servants etc. - precisely the most politically articulate spectrum of the population. Nigeria and the Sudan are good examples of such broad-based resistance. If these measures are to have any serious possibility of success then they require

an authoritarian form of regime with the capacity to resist these pressures. The high correlation between the economic reform programmes and military governments appears suggestive in this respect. In addition to the restructuring of the relations between the state and society (emergence of a less accessible, more repressive polity) there is a radical shift of emphasis within the state apparatus itself away from the representational/legislative organs with their legitimating and mediating roles and toward the bureaucratic--executive organs, whose operations are characterized above all by the complete exclusion of any form of population participation.

In the longer view, it is also worthwhile to recall that historically the process of constituting the "market" as an autonomous level in the first instance has always involved a considerable degree of violence. Its fundamental condition was the freeing of productive labour from its conditions and the commodification of both free labour and means of production. Once this "separation" is effected the market through the normal operation of the law of value reproduces both wage labour and capital, and the social relations between them, as "natural", "eternal" relations. The initial act of separation however is itself a forcible process and is executed only through the deployment of state power; it is in this that the centrality of the state in the transition to the "free market" is paradoxically founded. Nevertheless its result is the displacement of the element of compulsion from the political level as such to the market i.e. to the private owner of the means of production. The privatisation of compulsion [Meiskins-Wood, 1981] simultaneously permits the state to disassociate itself from the immediate level of production and ascend from being the private organ of the feudal aristocracy to its new status as a "public" authority. This process incorporates a double mystifying function: that of disguising the element of compulsion on the market, as well as the state's complicity in structuring the historical conditions for the emergence of the market.

Without the unconditional dependence of the labourer on the market, which is at the same time the source of all labour discipline, this privatisation of coercion crucial to the autonomisation of the market as a distinct realm of social relations cannot be realized. The full rationalisation of capitalistic conditions becomes possible only on the basis of the destruction of the escape-route of the labourer to his primary means of production: land. One may suggest that it is precisely this "separation" which has yet to be fully accomplished in the African countries⁶, where both peasant and wage-worker relate

conditionally to the market and dream of a return to conditions of self-mastery. The Bank appreciates the effect of this at the level of wages (it is one of the reasons advanced for higher wages in Africa than Pakistan or Bangladesh) but misses the general problem posed by this for the emergence of a market in its "free", specifically capitalistic form. In particular it fails to see the contradiction between its support for small holder agriculture and the advocacy of the paramount interests of the market place; consequently it simultaneously romanticizes the peasant small holding and castigates its proclivity for subsistence and self-reliance.

Further it is necessary to realize that unlike the original "expulsion" of the (feudal) state from the process of production, the freeing of the market from political intervention at this juncture in the development of capitalism involves a quite different order of significance, particularly in the peripheral formations. The "re-entry" of the state into the conditions of production at a certain stage in the historical development of capitalism, and the form of that intervention (whether Keynesian or social democratic), reflected fundamental contradictions and was the product of specific historical struggles and a particular correlation of political class forces. Therefore it cannot be reversed without intervening decisively in political class relations⁷ (precisely why monetarism, the most overtly anti-political of all capitalist ideologies, is also the most severely disruptive of political relations). In the post-colonial situation the correlation of political forces expressed itself in (a) the prevalence of interventionist statist and "non-capitalist" ideologies and (b) conviction regarding the necessity of state regulation (protectionism) to mitigate the law of uneven development on the world market as a precondition for national development. Here it is the absence of the state, not its presence, that is equated with repressive socio-economic conditions. For precisely this reason efforts (particularly from outside) to restructure the relationship of the state to production tend to provoke substantial ideological opposition⁸.

In reality there is little new about these prescriptions advocating the eternal wisdom of "market economics". The IMF and the World Bank have been proposing similar positions to African governments for years. What has altered radically however is the political context; economic debilitation - and herein lies the principal utility of the present crisis - has produced in African leaders an uncharacteristic (if probably temporary) congeniality for market economies. The crisis has produced an environment favourable to a "belated push" in the direction of market economies, partly by eroding the capacity of

African governments for self-reliance and exercise of political autonomy⁹, and partly by discrediting interventionist policies. The change in the ideological climate is particularly noteworthy, with the return to fashion of previously discredited neo-classical modes of analysis which stress allocative efficiency, "comparative advantage" and the primacy of the market. However this "belated push" in the direction of market forces after a period of interventionist policies can only be accomplished by repressive regimes, particularly in the presence of strong ideological and political challenge¹⁰. It is therefore not altogether surprising that free-market prescriptions, while formally ignoring politics, should place hidden stress on the role of the state.

The Political Critique

This becomes obvious when we turn once again to the views of the World Bank. In spite of its extended economic analysis, the fundamental critique of the African condition by the World Bank is political. In the final analysis the "state" in Africa is seen as the problem. Given the political determination of the changes in the nature of the world market of which the Bank's position constitutes a critique, it is not surprising that the principal blame for its failure should be laid at the door of the "policy and administrative framework", the code adopted by the Bank to refer to the African state and its economic practices and policies. On the one level this includes the complex of fiscal, exchange rate and other measures associated directly or indirectly with ISI, which follows logically from the market emphasis. But the attack is also much broader, and encompasses what is seen as the general debilitation or "decline in the capacities" of the African state as a developmental medium. This "critique" is not exclusive to the World Bank. A number of recent academic works even more bluntly identify the state as the site of the irrationalities responsible for African retrogression [Sandbrook, 1985, Price, 1983]. This academic critique, which is derived from a particular reading of the Brazilian and South-East Asian "miracles", locates the state as the crucial variable in the contemporary transitions to capitalism (the so-called "newly industrializing countries"). Its thesis is that the African state is incapable, for various reasons, of ensuring the rational management and stability required for capitalist transformation. While the neo-classical paradigm of the World Bank does not recognize politics - so that the state can be introduced into the analysis only by way of metaphor - this academic critique on the other hand comes close to fetishising the state and does not share the enthusiasm for the abstract "market". From their separate origins however they both argue the necessity of a "strong state" and the strengthening of the "capacity"

of the state, while conceiving the state in complete abstraction from its social content.

Two aspects of the attack on the state require comment. The first is that the focus on the state constitutes, in the World Bank Literature, really an implicit attack on the "dominance of the political" which characterized independence, and the economic practices associated with the redefined balance of global political power. The second is that "the state" is seen simultaneously by the World Bank as the problem and the solution. Thus the views of the World Bank on the state are characterized by a peculiar ambivalence, advocating in general its withdrawal from the market and yet in other instances its creative intervention into the conditions of production. This apparent confusion is due to the failure of the Bank to distinguish between two historically distinct phases of the relationship of the state to the market under capitalism: a first stage during which, as we have seen, the intervention of the state is required in order to constitute the "market" in its specifically capitalist form, as an autonomous level. The completion of this process permits the state to effect the second stage, an apparent "withdrawal" from the immediate conditions of production. In the original development of capitalism these constituted distinct and separate historical times; in the circumstances of the peripheral countries however they are "telescoped" into a single historical time. That is: market ideologies established their dominance before the sufficient conditions have evolved for constituting the "market" as a separate and autonomous level in these formations. This is due to the articulation within a single world market of developed capitalist economies (i.e. those in which the autonomisation of the market is already a fact) and underdeveloped ones, as well as the effect of the hegemonic ideology on the world market (that of "free trade").

This historical and structural asymmetry is basic to the confusions of the World Bank on the relationship between the "political" and the "economic" in capitalistic production, a confusion particularly apparent in the way in which the problem of agriculture is raised. The peasantry in Africa has reacted to long-term exploitation by withdrawal from the market (particularly export markets) and return to subsistence production and redistributive mechanisms, with the corresponding effects of demonetarisaton, shrinkage of the traded goods sector, and withdrawal from rural and urban wage relations. The World Bank views this withdrawal from market relations as a crucial element in the crisis of African agriculture, and blames it on state intervention in agricultural markets. In its view state agricultural price policies and the activities of the marketing boards in particular, had

adversely affected the "farmer's motivation to produce" for the market: it is argued that "the crop marketing agencies are the main point of contact between peasants, the money economy, and the state bureaucracy. Unless the marketing transactions are done fairly and efficiently, there are high risks of peasant disaffection from both the bureaucracy and the money economy" [World Bank, 1981, p.5.11]. The ideal solution is seen to lie in the liberalisation and privatisation of agricultural production and markets, with the role of the state being confined to extension and other support functions.

However this argument is preceded by and appears to contradict an earlier one in which state action is seen as crucial in the emergence and structuring of agricultural markets, and specifically in drawing the cultivator from the sphere of subsistence household production into the sphere of commodity relations. Employing its usual dualistic framework the Bank identifies subsistent production with backwardness and production for the market with "development" and a "modern economy". It argues that in the past "the dominance of subsistence production presented special obstacles to agricultural development" in Africa; thus at independence "most Africans were outside the modern economy", and "farmers had to be induced to produce for the market" [ibid, p.2.5.]. Naturally much of this function of enticing the cultivator into the marketplace was expected to be performed by the state, specifically through the development of an "incentives structure", defined as "all those aspects of the farmer's environment which affect his willingness to produce and sell". Although the Bank sees itself as acting in this respect in the interests of the peasant small-holder, this should not be confused with a defense of the self-sufficient household economy (on the contrary), or for that matter of the "small-holder" against the well-known effects of the marketplace.

This ambivalence toward the state is general to the World Bank position, and surfaces most clearly in the contradiction between, on the one hand, the strident demands for the withdrawal of African states for the market, and on the other extensive actions obviously required of the state in order to "free" and develop market institutions. The key to the transformations sought by the World Bank in the African economies is the state - partly because of the nature of the historical situation, but more broadly because of the processes involved in creating in the first place the social presuppositions of the market¹¹. From this viewpoint the crucial significance attached to the "policy and administrative framework" contrasts oddly with the emphasis placed elsewhere on the "market".

Conclusion

The argument proposed here is that both the content of the prevailing "economic reform" programmes in Africa and the specific political power relations that govern this process of "reform" - the disarticulation between economic reform and class struggle - endow the process of reform with a particular (and inevitable) repressiveness. Consequently then the ideal vehicle is the military regime, the archetypal "bankers" regime". The militarisation of the state apparatus in Africa in the present situation is associated with the ascendancy, conditioned by crisis, of market ideologies and the delayed re-integration of African economies into the world market. This authoritarian parentage should not however blind us to the nature of the project; the dissolution of the national market obliges - and is meant to oblige - the African countries to "adopt, on pain of extinction, the bourgeois mode of production", [Marx] The key to these transformations is of course the international debt¹².

In a suggestive article, The Economist¹³ has observed that "None of the [African] governments pursuing the new policies has yet been overturned in a coup, though several attempts have been made". Even ignoring Sudan, where Nimery's government was overthrown in April 1986 after adoption of IMF policies, a different reading of the evidence is possible. Militarisation (or re-militarisation) of the state may rather precede the adoption of these policies and hence constitute their political condition. Ghana (1981), Nigeria (1983) and Guinea (1985) are important examples of this (despite the differences internal to the military regimes) and possible pointers to the future¹⁴.

If there has not been a more widespread displacement of civilian regimes, it is because the regimes already in place, both civilian and military, were already sufficiently repressive to guarantee, with relatively minor modifications, the appropriate political framework. What should be stressed, however, is the changing historical and economic basis for authoritarianism, which should be seen principally, in the present conjuncture, as the political vehicles for the extensive reorganisation through crisis of the social conditions of production in Africa and of belated transition to market economies¹⁵.

Note to Workshop Participants at Dalhousie

The objective of this paper was to argue that the present crisis in African economies was to an extent the product of the changing position of these economies in the international division of labour, and of policies (frequently misconceived)

aimed at effecting such changes. It need to be stated that the solution to past policy errors does not lie in returning these economies to agricultural exports, which would be the effect of arguments derived from "comparative advantage". This paper also restates an earlier thesis [Hutchful, 1986] as to why under the present circumstances the democratisation of reform is not possible. The basic lessons may be stated bluntly: without a measure of democratisation and popular commitment the present reform programmes in Africa will simply not prove sustainable. The first route to democratisation is to accord "politics" its rightful place in the reform programmes, in other words to "rearticulate" politics and economics. A crucial element in this is to make Finance Ministers (and the planning process as a whole) more accountable to their national constituencies, and to confront - rather than ignore - the serious questions of national sovereignty that are raised by the Bank's reform programmes in their present form. The second is the recognition that democratisation is not possible without orienting economic reform toward the fulfilment of basic needs. This requires a basic re-orientation in the objectives of the present programmes, involving a shift, not necessarily from the emphasis on the profit motive - desirable as this would be in my own view - but rather from growth strategies based on production for external markets to growth predicated on the development of internal mass markets and satisfaction of popular needs.

References:

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1. This implies then that neither dependency theory nor the "basic constraints" approach can adequately conceptualise or explain this crisis.
2. For an extended analysis of the significance of political independence in this respect, see Bill Warren, "Imperialism and Capitalist Industrialisation", New Left Review, 81, 1974. The United Africa Company (UAC) described independence as the "greatest challenge" to foreign firms operating in Africa, a challenge to which the company responded by moving progressively from commercial to semi-industrial activity.
3. However in situations of severe or exceptional crisis reactionary governments may arise, which are quite prepared to diminish or even cast off altogether these political/democratic constraints in order to impose the purely economic rationality of "growth" policies. Such is the case with the recent emergence of right-wing governments armed with monetarist ideologies in the Western democracies, and at the extreme, of fascist governments.
4. For instance since April 1983 Ghana's currency (the cedi) has been devalued by 96 % in terms of the U.S. dollar. The first devaluation in 1983 was estimated to have reduced real wages by almost 50 %. The Guinean currency has been devalued by 92 % since 1985.
5. Nigeria has recently abolished agricultural marketing boards. The circumstances here however are clearly peculiar, since agricultural export produce has played a severely reduced role in government finances since the 1970s, having been almost completely displaced by oil (98% of federal revenue in 1984).

6. In some respects it could even be argued that both the economic and the political-ideological conditions of semi-industrialisation have tended not to eliminate but rather to consolidate petty-commodity forms and the "multiform" character of the economy.

7. In the periphery these political relations should not be confused with "national" boundaries since they are in fact co-extensive with the world market, involving "foreign" capitalists and "national" wage-labour and politico-administrative and other functionaries. Hence a significant shift in these relations - precisely what is occurring in the "reform programmes" of the lender agencies - may provoke fears of "neo-colonialism" and "recolonisation" and be resisted at that level.

8. This is particularly clear in the bitter opposition to "privatisation" in almost all African countries undergoing adjustment programmes.

9. An indication of the termination of the conditions of autonomy is the sputtering of the many "revolutions" launched on the continent in the seventies and early eighties.

10. An earlier statement of this position, developed with a somewhat different emphasis and in the context of the experiences of Indonesia, Argentina, and Turkey, appears in Hutchful [1986]. Hirschman [1979] considers more explicitly the relationship between orthodox economic policies and authoritarianism in Latin America in the 1970s, in his critique of John Sheahan's "Market-Oriented Economic Policies and Political Repression in Latin America", Economic Development and Cultural Change, vol. XXVIII, 2, 1980 (a paper that unfortunately came too late to my attention to influence my own analysis). Hirschman disputes the connection explored by Sheahan, quoting the experiences of Colombia, where a gradual process of adjustment made it possible to escape such authoritarian results. However Colombia's experiences cannot be generalized, since a major characteristic of most recent adjustment programmes is precisely the attempt to equalize domestic and international prices over the very short term. Hirschman himself conceptualises the problem rather in terms of what he describes as the alternation between "reform" and "entrepreneurial" functions in Latin America. It may be pointed out in any case that his periods of the "entrepreneurial function", which coincide with authoritarian political rule, take the form most frequently of a return to orthodox economic policies.

11. In any case this ambivalence is based on a misperception. While state action may help to "free" the market (defined as the immediate area of exchange relationship), the strong contradictions associated with this process as well as with the normal operations of the "free" market require - not a liquidation of the state's presence - but rather its displacement and consolidation at other social levels. Intriguingly, realization of the need for strong state action in the initial construction of the market was basic to classical liberalism but has been lost on their neo-classical progeny.

12. According to The Economist (June 28, 1986), "Debt is enforcing the belated but necessary reform of Africa's economic policies". Since the African debts (like the even larger ones of Latin America) are admitted to be unpayable, obviously then "debt-related policies" must be related to something else other than debt-repayment. Two "real" objectives come to mind: first the insistence on unserviceable debts constitutes a precautionary claim of Africa's potential future surplus; and second (and most important) the debt provides the appropriate political conditions for these market-oriented reforms.

13. "Black Africa's Future: Can it go Capitalist?" June 28, 1986. The Economist is not the only organ extolling the "sensible economic policies" now being followed by Third World governments, cf. also Time Magazine, July 20, 1986.

14. For Ghana and Nigeria, see my paper, "With or Without the Fund? Recent Adjustment Programmes in Ghana and Nigeria", University of Toronto (mimeo), April 1986.

15. It may be objected that precisely the most important new development in the political

character of militarism in Africa is its anti-authoritarian, populist and even "progressive" direction, exemplified by Ghana and Burkina Faso. In my recent paper, "New Elements in the Political Theory and Practice of Militarism in Africa" *International Journal* (forthcoming: October 1986) I have tried to insist on the complex character of these regimes and the extremely unstable class "conjunctures" they initially represent, which makes them both fairly autonomous in the short run and essentially unpredictable in the final directions which they will take. The case of Ghana demonstrates how this unstable conjuncture may be resolved in favour of precisely the kind of transformations under discussion here.

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SUMMARY

Selon la thèse qui fait l'objet du présent document, la crise que traversent actuellement les économies africaines est dans une certaine mesure la conséquence de la mutation subie par ces économies au sein de la division internationale du travail, et des politiques (souvent mal conçues) visant à amener ces changements.

L'argument avancé ici voudrait qu'aussi bien le contenu des programmes des "réformes économiques" en cours en Afrique, que le rapport de

forces politiques qui régit ce processus de "réformes" - la désarticulation entre réforme économique et lutte des classes - donnent une coloration répressive particulière (et inévitable) à ce processus de réformes. Ainsi, le régime militaire, archétype du régime de "banquiers" est le promoteur idéal de ces réformes. La militarisation de l'appareil de l'Etat dans le contexte africain actuel, va de pair avec la domination, favorisée par la crise, d'idéologies de marché et le retard de la réintégration des économies africaines sur le marché international. Toutefois il ne faudrait pas que ces origines autoritaires nous empêchent de voir la nature du projet; la dissolution du marché national oblige - et tel est en effet son objet - les pays africains "à adopter, sous peine d'extinction, le mode de production bourgeois" [Marx]. Il est évident que la dette internationale favorise ces transformations.

Dans un article évocateur, The Economist fait observer qu'"aucun des gouvernements (africains) qui appliquent ces nouvelles politiques n'a encore été renversé par un coup d'Etat, malgré plusieurs tentatives". Même en passant sous silence le cas du Soudan où le gouvernement de Nimeiry a été renversé en Avril 1986 après adoption des politiques du FMI, une interprétation différente des faits est possible. Il peut se faire que la venue (ou le retour) des militaires au pouvoir précède l'adoption de ces politiques et constitue donc le contexte politique de leur application. Le Ghana (1981), le Nigéria (1983) et la Guinée (1985) illustrent bien cette situation (en dépit des différences internes de ces régimes militaires) et peuvent servir d'exemples à l'avenir.

S'il n'y a pas eu davantage de régimes civils renversés, c'est parce que les régimes en place, tant civils que militaires, étaient déjà assez répressifs pour asseoir sans grands changements, un cadre politique approprié. Il faudrait cependant souligner la modification de la base historique et économique de l'autoritarisme, qui devrait être vu essentiellement dans le contexte actuel, comme l'instrument politique de la réorganisation massive, en période de crise, des conditions sociales de production en Afrique et de la transition tardive vers des économies de marché.

Il convient de souligner que la solution des erreurs politiques passées ne réside pas dans un retour de ces économies à l'exportation de produits agricoles comme le préconisent les théories issues de la thèse des "avantages comparés". Le présent document expose également une fois de plus les raisons pour lesquelles dans les circonstances actuelles, la démocratisation de la réforme n'est pas possible. L'on peut énoncer

sans ambages les leçons essentielles: si les programmes de réformes exécutés actuellement en Afrique ne sont pas assortis de mesures de démocratisation et n'encouragent pas l'engagement des populations, ils ne seront tout simplement pas viables. La première condition à remplir dans le processus de démocratisation, c'est de donner à la "politique" la place qui lui revient de droit dans les programmes de réformes, en d'autres termes de "réarticuler" la politique et l'économie. A cet effet, il convient avant tout de faire en sorte que les ministres des finances (et l'ensemble de l'appareil de planification) rendent davantage compte à leurs administrés et de faire face - et non d'ignorer - aux questions sérieuses de souveraineté nationale qui sont posées par les programmes de réformes de la Banque mondiale dans leur forme actuelle. La deuxième condition à remplir dans cette voie est la reconnaissance qu'il n'est pas de démocratisation possible sans l'orientation de la réforme économique vers la satisfaction des besoins essentiels. Pour cela il importe de réorienter fondamentalement les objectifs des programmes actuels, de manière à reporter l'accent non de la recherche du profit - celle-ci étant à mon avis souhaitable, mais des stratégies de croissance visant à la production destinée au marché extérieur, à la croissance en vue du développement des marchés intérieurs et de la satisfaction des besoins des populations.

CRISE ECONOMIQUE ET CONTRE-POUVOIRS AU MALI

Pascal Baba F. Couloubaly*

Introduction

"Le Mali figure parmi les six pays les plus pauvres de la rubrique "pays à faible revenu" du Rapport sur le développement dans le Monde (1980) de la Banque Mondiale. Est-ce la raison pour laquelle il suscite si peu d'intérêt de la part des spécialistes du Tiers Monde, si l'on met à part une poignée d'africanistes? Vaste territoire sahélien, peu peuplé, sans accès à la mer, caractérisé par une insécurité économique due aux aléas climatiques et à la désertification, autant de handicaps encore aggravés par une structure productive précaire, essentiellement rurale et assujettie commercialement et financièrement à l'extérieur, le Mali ne constitue ni un enjeu décisif dans la stratégie des groupes multinationaux (bien que les réserves minières soient virtuellement importantes), ni un débouché pour les commerçants, ni une zone d'investissements rentables pour les banquiers, ni même un terrain d'investigation pour les experts. Restent quelques anthropologues, ethnologues, agronomes, ...et les Maliens eux-mêmes"¹.

Cette très longue citation dont l'intérêt excuse la reproduction intégrale est de P. Jacquemot qui introduit par ces mots un ouvrage collectif paru en 1981 à l'Harmattan: Le Mali, le paysan et l'Etat. Le mérite de cette série d'études menées par des Maliens eux-mêmes, tour à tour sur l'agriculture malienne, la dimension politique du développement rural, les sociétés et entreprises d'état et sur la situation sanitaire au Mali; le mérite de cet ouvrage disions-nous, est d'allier la rigueur au témoignage. Témoignage d'une situation vécue au jour le jour depuis près de vingt six ans, et dont le drame à tous les niveaux se mesure au sentiment d'un désespoir toujours croissant.

En effet, à la lumière de tous les documents disponibles sur le

Mali, quelques statistiques économiques incomplètes et quelques prises de position idéologiques mises à part, on convient que depuis l'indépendance octroyée en 1960, ce pays, pour de multiples raisons, était parti pour vivre sa croissance dans un climat de crise quasi permanent. Pour le comprendre, il est indispensable de se défier d'une analyse économique qui ne prendrait en compte que les seuls résultats perceptibles d'un effort ou d'un échec de développement; alors que l'un et l'autre ont partie liée avec le consensus indispensable entre les pouvoirs d'état et les masses qui sont les agents incontournables de ce développement.

Aussi est-il nécessaire de se demander si dans le cas du Mali, comme dans celui de nombre d'états africains, la possibilité d'une affection si tragique du système économique national par la crise mondiale ne provient pas, dans une grande mesure, de ce que dès le départ, les modèles d'organisation et d'administration des sociétés ont fait la part trop belle aux décideurs, arrachant ainsi à la grande majorité son droit de regard et d'initiative dans son destin propre. La vulnérabilité à la crise, sa persistance et le désespoir d'en jamais sortir ont dépendu et continueront longtemps de dépendre de la fragilisation des groupes sociaux, fragilisation rendue possible par des politiques étatiques trop généreuses, pour ne pas dire démagogiques qui, dès le départ ont promis de gérer tout uniment le destin des peuples, en comptant pour beaucoup sur l'unique aide étrangère, autant matérielle, idéologique que politique.

Au Mali, une telle politique d'émoussement systématique des initiatives individuelles a commencé avec une expérience socialiste qui, pour réaliser le bien-être social du peuple, commençait par niveler les insatisfactions et les demandes des groupes sociaux, réduits à appliquer de mauvaise grâce un collectivisme étatique étranger au moindre souvenir de leur histoire proche ou lointaine. Lorsque à partir de 1968, le régime militaire promit de libérer les énergies, il se garda de se déssaisir des secteurs clés de l'économie, persuadé lui aussi de l'incapacité des groupes professionnels de formuler leurs demandes propres et encore moins de se gérer.

Brusquement, sans aucune transition, au Mali comme ailleurs, le maître-mot est aujourd'hui la libéralisation et la privatisation. L'Etat affirme soudain ne pouvoir tout faire et prie instamment les différentes communautés nationales de se prendre en charge. Or, contrairement à ce que l'on veut bien nous faire croire, ce n'est pas tant la persistance de la crise mondiale que la résistance passive des populations qui a forcé à cette confession tardive de la vanité de l'Etat.

La moindre attention, non plus économique, mais sociologique aux raisons profondes des échecs des politiques de développement découvrirait que le tout de la croissance ne repose pas uniquement sur le parfait fonctionnement de la technocratie de l'Etat. Y. G. Kébé qui s'est longuement penché sur le monde paysan au Mali est formel: "Les expériences de développement tentées depuis deux décennies, analysées objectivement et sans passion, révèlent l'indéniable constat qu'aucun développement digne de ce nom ne peut se faire au Mali sans l'adhésion totale et sans réserve des paysans"². Mais c'est dire aussi que pendant deux décennies de développement, l'Etat s'est tout simplement illusionné sur l'impact de son pouvoir réel. En réalité, celui-ci a toujours buté sur des contre-pouvoirs d'autant plus puissants qu'ils ont toujours été passifs et sournois.

Aussi peut-on affirmer sans se tromper que depuis assez longtemps (depuis les premières désillusions des années d'indépendance), les groupes sociaux au Mali ont été acquis à l'idée de cesser de croire à l'Etat et de se prendre en charge. La crise du pétrole et la sécheresse, qui, en 1973 sont venues aggraver l'état d'une économie déjà fortement dégradée n'ont fait qu'activer la maturation et une sorte d'officialisation de ces contre-pouvoirs déjà à l'oeuvre dans les campagnes comme dans les villes.

Ce sont ces contre-pouvoirs disparates et souterrains que notre article se propose d'étudier.

I. Le Mali, un Pays désespérément agricole

Avant d'aborder le caractère profondément rural du Mali, caractère sans lequel il est impossible de comprendre quoi que ce soit à la situation socio-économique toute particulière de ce pays, il est utile de rappeler auparavant quelques données générales qui font que tout espoir de développement sur les modèles qui ont présentement cours, est ici plus qu'une gageure.

Vaste territoire de 1.204.000km² dont 90% de la superficie est désertique, le Mali a d'abord un handicap démographique de taille: c'est que sur ses 6,3 millions d'habitants, au moins 49% ont moins de 15 ans; la population active (théoriquement de 15 à 55 ans) ne chiffrant que 46% du total³. Ici, la disproportion entre les possibilités financières de l'Etat et son obligation morale de faire face à une croissance démographique forte constitue un exemple limite. En effet, en 1979, pour un budget faible de 70.103.747.000FM⁴, dont seuls

6,4% étaient destinés à l'équipement, il y avait un accroissement démographique de 2,7% pour la population rurale et 5,7% pour la population urbaine.

L'urbanisation des villes, indisponibles pour l'emploi s'est accrue à la vitesse vertigineuse de 388% en 19 ans, au détriment des campagnes, pourtant bases de l'économie nationale. Les statistiques déjà très discutables de 1979 selon lesquelles il n'aurait existé à l'époque que 80 à 90.000 personnes en chômage au Mali sont aujourd'hui d'autant plus erronées qu'en la même période, 66,3% du budget étaient consacrés à l'Education nationale et à la Défense. Effort qui aurait été tout à fait louable (en ce qui concerne l'Education tout au moins) si la mauvaise politique éducative n'avait contribué en même temps à former autant de chômeurs potentiels auxquels la fonction publique fermait brutalement ses portes avec les mesures drastiques de recrutement de Septembre 1983.

A la fin de 1978, la dette extérieure du Mali s'élevait à 185,6 Milliards de FM. Pour lutter contre cette politique d'éternelle fuite en avant qui, depuis l'indépendance assigne à l'Etat de devoir supporter beaucoup plus qu'elle ne peut espérer offrir, le planificateur avait de bonne heure compris la nécessité de compter sur l'agriculture et l'élevage, seules ressources disponibles dont la rentabilisation ne se serait pas heurtée aux perpétuels problèmes des technologies et des mentalités.

Il faut bien comprendre en effet que la spécificité du cas malien tient au fait qu'il est le seul en Afrique Occidentale à ne pouvoir compter sur pratiquement rien d'autre que l'agriculture. Quel que soit le sentiment de désespoir que connaissent les pays voisins du Mali, ceux-ci disposent au moins de ressources minières ou halieutiques pour équilibrer un développement qui, comme au Mali, ne serait pas uniquement ou exclusivement basé sur l'une des ressources les plus incertaines et les plus aléatoires du Continent.

Quant à l'industrie, elle n'a jamais été qu'un problème de plus, tant à cause des options idéologiques et politiques qui l'ont fondée et maintenue contre vents et marées, qu'à cause finalement de ses chances d'expansion dans le contexte qui est le sien. "Concentrée sur l'axe Bamako-Ségou, dit P. Jacquemot, l'industrie malienne reste embryonnaire. Elle transforme essentiellement les produits du cru: coton, oléagineux, sucre, fruits, tabac,... S'y ajoutent de petites unités d'assemblage de cycle ou de matériel agricole, neuf entreprises de bâtiments et quatre unités de produits chimiques. Le secteur comprend des sociétés d'Etat, des sociétés mixtes ou encore des entreprises privées

d'une taille modeste, inférieure à 1.000 employés. L'équilibre financier des entreprises publiques n'a jamais été atteint depuis l'indépendance: 14 milliards de FM de perte en 1979, soit 12% du chiffre d'affaires"⁵.

Le Mali est par conséquent un pays désespérément agricole. En effet, l'enquête de 1968-69 révélait que la population rurale était estimée à 90% de la population; la population agricole se chiffrait à 84%. Aujourd'hui, la paysannerie malienne compte environ 6M de personnes sur, rappelons-le, un total de 6,3M personnes (enquête de 1976-77). Plutôt que d'invoquer donc une analyse économique classique des causes et des repercussions de la crise socio-économique au Mali, analyse dont la tendance habituelle est d'occulter le vécu des problèmes derrière des forêts de chiffres puisés à des sources ésotériques, tout tend ici à démontrer que les racines du mal-développement et les réactions sociales qu'il suscite puisent dans une perception singulière du plus grand nombre par les pouvoirs d'état. Cette perception de plus de 90% de la population a, depuis la période coloniale, dicté les moyens de son exploitation - ne craignons pas le mot - et occasionné naturellement cette forme de lutte silencieuse que la paysannerie sait si bien mener: le repli sur elle-même.

Pour donner des références objectives, examinons rapidement les politiques étatiques appliquées aux cultures céréalières et aux cultures de rente.

1./ Les Céréales: politique de production et de commercialisation

Environ 88% des terres cultivées au Mali (1,7 millions ha sur 9,4 millions en jachère) sont consacrées aux productions vivrières dont les principales sont le mil-sorgho et le riz. Ce n'est pas un hasard si déjà en 1929, l'Office du Niger pensait réserver une bonne partie des 960.000 ha de superficies irrigables aux cultures vivrières (et notamment au riz)⁶. Certes, si à l'époque cette denrée était capitale dans la stratégie d'approvisionnement de la Métropole, il est indéniable qu'elle l'était également pour l'alimentation des populations locales, même si par ailleurs, elles étaient financièrement perdantes dans les termes de l'échange entre métropole et colonies.

Depuis les formations politiques pré-coloniales, il existe au Mali un adage bien connu qui affirme que "la saison sèche est faite pour la guerre et la saison des pluies pour la culture des champs". C'est dire que pour l'homme malien, il existait deux voies pour s'ennoblir: la guerre ou l'agriculture. C'est sans doute pour cette raison que les populations rurales sont toujours parvenues à l'auto-suffisance

alimentaire lorsqu'elles n'étaient pas prises de cours par des calamités inattendues telles que la sécheresse, les criquets ou les agressions extérieures⁷.

Cette expérience multi-séculaire, mais surtout cette disposition d'esprit par rapport à l'agriculture céréalière étaient un acquis dont héritaient les dirigeants au lendemain de l'indépendance. Celle-ci acquise, au moins deux dispositions majeures, prises sans aucune consultation à la base, vont rapidement dégrader la situation des cultures céréalières jusqu'à réduire les producteurs à l'état de mendicité présente.

La première mesure réside dans la bureaucratisation soudaine et massive du secteur agricole, bureaucratisation consécutive aux options du gouvernement socialiste qui crée par la force les champs collectifs. Parallèlement à ceux-ci naît un circuit de commercialisation au niveau étatique (l'OPAM) qui se substitue à la bourgeoisie commerçante en fixant autoritairement les prix d'achat et les quotas à commercialiser sur toute l'étendue du territoire.

La seconde mesure résulte de l'option du régime militaire au pouvoir dès 1968, option qui finit par donner le coup de grâce aux cultures céréalières. En effet, depuis le programme triennal de redressement économique et financier (1970-1973) "... si le développement des productions agricoles était considéré comme décisif, il faut remarquer que cette croissance s'adressait surtout à l'agriculture spéculative et non à l'agriculture vivrière. En effet, on préconisait une baisse des productions vivrières (base 67-68) de 42 à 29% au détriment des cultures d'exportation dont le taux de croissance était fixé à 9,1%"⁸. Comme un leitmotiv, le même auteur poursuit p. 42: "Il est important de souligner que les cultures industrielles d'exportation ont enregistré une croissance continue de leur rendement même pendant les périodes de grande sécheresse (1972-1974), alors que les cultures vivrières ont connu une regression sensible, à l'exception du riz, céréale de consommation urbaine faisant l'objet depuis 10 ans d'une intense promotion".

Les tableaux ci-après en donnent une idée.

Tableau I: Production comparée des céréales principales et du coton au Mali (en tonnes)

Années	Mil-Sorgho	Riz-Paddy	Coton
1972	705.000	195.000	67.939
1973	624.000	100.000	66.183
1974	660.000	90.000	50.870
1975	850.000	250.000	61.182
1976	865.000	300.000	103.391
1977	1.050.000	350.000	118.875
1978	820.000	220.000	113.761
1979	920.000	270.000	127.646

Source: "Marchés tropicaux et Méditerranéens".
N° spécial 1780 du 21 Décembre 1979.

Tableau 2: Rendement à l'hectare (en kg)

Années	1964-65	1967-68	1969-70	1972-73	1975-76
Mil-Sorgho	820	800	810	690	720
Riz	1.000	870	1.220	760	1.300
Arachide	620	650	1.090	-	850
Coton	370	480	600	830	1.180

Source: Y. G. Kébé: idem, p. 42.

Cette politique systématique de dévalorisation des cultures vivrières ne laisse cependant le paysan ni libre de traiter avec qui lui plairait (nous avons parlé de l'Office national de commercialisation qui, il n'y a pas longtemps encore contraignait à vendre des quotas déterminés), ni de disposer de la totalité du peu qui lui resterait. En effet, les autorités bureaucratiques ont mis au point un calcul savant de la productivité paysanne, de son taux de rémunération afin de fixer un barème fiscal qui, en définitive par touches successives lui enlève tout. Encore faut-il signaler que ce calcul dont Y. G. Kébé révèle toute la subtilité est bien plus favorable à la culture de rente qu'à la culture céréalière.

Bien entendu, au fil des campagnes, le refus de plus en plus systématique de vendre à l'Etat a obligé celui-ci à lâcher du lest et à s'effacer pour "libéraliser" le marché. Ainsi, les paysans peuvent-ils traiter avec les ODR (Opérations de Développement Rural, pièces maîtresses de la stratégie de développement rural du régime militaire). Mais, comme le dit B. Yattabari "cela ne signifie pas que le paysan est

pour autant libre de vendre sa récolte au plus offrant (...). Loin s'en faut. Comme à l'opération Riz Mopti, contrôlé par la Banque Mondiale, ce n'est qu'après avoir payé en nature à l'opération ou à l'Office toutes ses redevances, ses frais de battage et enfin toutes ses dettes sur les années précédentes que le paysan pourra commercialiser librement ce qui lui reste. Si toutefois bien entendu, il reste quelque chose! En 1980-81, 35% des familles de paysans colons de l'Office du Niger avaient un revenu nul⁹.

S'il est vrai que les ODR ont été un moindre mal par rapport à cette bureaucratie tentaculaire de l'Etat, elles ont cependant introduit le problème de la rentabilité et de la compétitivité qui à leur tour ont posé aux paysans l'urgence et la nécessité de l'équipement et de l'investissement. Or, "Pendant la décennie 1967-77, les prix des équipements agricoles ont connu un accroissement annuel moyen de 30,96% alors que les produits agricoles pour la même période ont évolué de 0,2% seulement"¹⁰.

La conséquence de tant de facteurs négatifs sur le niveau de vie du paysan malien est proprement ahurissante car, "en 1978, pour maintenir le volume de sa consommation en sucre, le paysan doit produire:

- 92,3% plus de mil-sorgho en 1978 qu'en 1962-63;
- 88,5% plus de paddy en 1978 qu'en 1962-63;
- 93,2% plus de coton en 1978 qu'en 1962-63;
- 89,6% plus d'arachides en 1978 qu'en 1962-63;

alors que dans le même temps, l'évolution de ces produits agricoles n'a été que de:

- 12,5% pour le mil-sorgho;
- 18,5% pour le paddy;
- 10,93% pour le coton;
- 16,8% pour les arachides¹¹.

La situation des cultures de rente est-elle meilleure?

2./ La situation des cultures de rente

Elle est inversement proportionnelle à celle des céréales. Le coton qui, aujourd'hui plus que jamais demeure le seul espoir du Mali, vient

en tête. En effet, représentant 60,3 et 57,7% des exportations totales en 1977 et 1978, cette culture de rente générait des apports en devises de 36,9 et 24,5 milliards de FM. D'ailleurs, la politique promotionnelle dont la culture commerciale du coton a bénéficié au détriment de la culture vivrière a fini par rendre sourd le paysan au slogan dramatique de l'auto-suffisance alimentaire. La raison en est simple: en 1979, le coton est la seule ressource qui lui rapportait 11,5 milliards d'argent frais.

Or évidemment, une telle recette ne fait pas illusion. Pour éviter de nous redire sur les procédés d'encadrement et de commercialisation des cultures de rente (qui, dans leurs principes, sont semblables à ceux de tous les ODR), examinons plutôt ce sur quoi l'option maximum de l'Etat pour ces cultures a abouti en 1985-86; en ce qui concerne notamment le coton.

Pour cette période, les cours du coton ont chuté dans des proportions telles que le Ministre de l'Agriculture et le Ministre des Finances et du Commerce ont été contraints à des déclarations alarmistes dans les médias d'état. La note était plutôt salée puisque le Ministre des Finances et du Commerce avouait que cette chute coûtait au Mali une perte de l'ordre de 20 milliards de francs CFA. Et le journal SANFIN de révéler qu'en effet, alors qu'en Juillet 1985, la livre de fibre de coton était cotée à 65,87 cents à la bourse de New York, elle s'effondrait à 37,60 cents en Octobre. Ajoutant: "Alors que la livre était coté à 63,76 cents en 1982, le paysan africain touchait moins de la moitié de 4F français, soit moins de 100F CFA au kilo. En 1985, les cours s'étant effondrés quasiment de moitié, faites le calcul vous-mêmes!"¹².

La crainte de l'auteur de l'article se justifie amplement lorsqu'il révèle que "le budget 86 se caractérise par la prédominance des recettes fiscales qui atteignent le "record absolu" de 75% des recettes budgétaires"¹³. Autrement dit, pour bien moins d'argent qu'il touche sur son coton, le paysan payera plus d'impôts.

Tous ces renseignements suffisent à démontrer un certain nombre d'hypothèses:

- Le concept de crise mondiale inféré de la flambée des cours du pétrole depuis 1972-73 et de la récession économique qui s'en est suivie passe graduellement, dans le cas africain, de la réalité à une mystification idéologique subtile qui justifie et excuse de grandes erreurs d'options politiques antérieures aux années 70. Cette

occultation réussit d'autant plus que pour les pays du Sahel en général, et pour le Mali en particulier, la crise du pétrole s'est conjuguée à une sécheresse persistante. Mais parce que le déficit vivrier a été provoqué bien avant la sécheresse et la crise du pétrole, les causes de la misère paysanne sont à rechercher au-delà de ce que l'on appelle la crise mondiale.

- De sorte que la reprise économique mondiale et la fin de la sécheresse n'auront pas au Mali pour conséquence le retour de la sécurité alimentaire et l'amélioration du niveau de vie. La campagne agricole 1985-86 a été l'une des meilleures depuis 1972-73. On a évalué la production globale de céréales à 1.400.000 tonnes. Malgré tout, le déficit céréalier serait de l'ordre de 275.000 tonnes compte tenu du système d'administration propre aux ODR, des pertes de battage et des semences¹⁴. Quant au sort des cultures de rente pour la même période, l'exemple concret du coton a été évoqué plus haut.

- Enfin, la crise de la société globale malienne est la crise des structures de l'agriculture. Seule source de devises, les recettes fiscales que l'Etat en tire, conditionnent le développement global de la société tout entière, qu'elle se trouve dans les campagnes ou dans les villes.

Il est cependant impensable qu'un corps social quel qu'il soit, accepte une oppression aussi persistante et aussi profonde sans, à la longue, fourbir les armes de son émancipation. C'est ce que nous allons à présent examiner au niveau du monde rural.

II. Une Société Rurale en mutation

Avant d'aborder le problème des contre-pouvoirs dans la société rurale malienne, il est important de dire ce qu'un tel concept peut impliquer dans ce contexte précis.

Les sciences sociales, et notamment la sociologie marxiste, ont toujours éprouvé quelques difficultés, voire parfois de la gêne à aborder le monde paysan. En effet, lorsque le système d'exploitation de celui-ci n'est pas aussi manifeste que celui des latifundia sud-américains ou que celui des systèmes féodaux de l'Asie pré-marxiste, la recherche se trouve bloquée du fait même de la définition de la société paysanne. En Afrique, le mythe d'une société rurale idyllique, sans contradiction et profondément fataliste a longtemps empêché les scientifiques africains eux-mêmes de s'intéresser à cette question, certains lui préférant l'analyse d'un monde ouvrier introuvable mais déjà théoriquement bien appréhendé par le marxisme classique.

Dans certains pays comme au Sénégal et au Nigéria par exemple, "les relations de domination et d'exploitation"¹⁵ en cours dans le monde paysan ont cependant été vite identifiées sous l'éclairage de l'étude des confréries religieuses où des masses importantes de paysans (à l'échelle de régions entières, voire à l'échelle nationale) étaient spirituellement et économiquement organisées par des chefs religieux politiquement influents.

Le sociologue malien est quant à lui, bien loin de trouver l'aubaine scientifique de telles structures de domination et d'exploitation inhérentes au monde paysan. Certes, Kary Dembélé, dans sa thèse de 3ème cycle citant P. Idiart révèle des systèmes de métayage assez proches du servage dans la boucle du Niger où le problème des terres cultivables se pose de façon cruciale¹⁶. Mais de façon générale, ce qui apparaît le plus, c'est la contradiction fondamentale opposant un monde paysan à un exploiteur commun: l'Etat.

Cependant, la question des classes sociales, se pose (et de plus en plus) à l'intérieur du monde paysan. Le problème essentiel demeure celui des alliances et l'incidence réelle de celles-ci sur l'organisation interne de la société rurale. Si le degré de développement de l'accumulation paysanne ne permet pas encore de déterminer de façon satisfaisante les différents services et prestations que de plus pauvres sont obligés de rendre à une petite bourgeoisie paysanne naissante, il est indéniable que des oppositions de fortunes et de conditions sont déjà décelables entre les diverses régions agricoles du Mali.

Le paysan de Mali-Sud (Koutiala-Dioila-Bougouni-Sikasso) ou celui de l'Opération riz-Mopti dont les recettes, souvent véritablement substantielles en coton et en riz, lui permettent de s'équiper, et même d'épargner; ces paysans-là donc ne ressemblent en rien aux métayers de la boucle du Niger, à certains colons de l'Office du Niger ou enfin aux cultivateurs d'arachide de la région de Kayes ne survivant bien souvent que grâce aux épargnes de leurs enfants expatriés.

Cependant, toutes choses étant par ailleurs égales, il faut bien savoir que lorsque dans la région de Kayes, le coût de l'impôt pour une famille de dix imposables correspond à 1.013kg de mil-sorgho et 875kg d'arachides, "ces quantités doivent être majorées de 76% pour la même famille qui serait à Dioila, Koutiala, Sikasso, Bougouni, Mopti..."¹⁷.

De toutes façons, cette sorte de tentative de planification de la

pauvreté n'empêche pas qu'en 1978 par exemple, "Le monde rural apportait (aux budgets régionaux) 67% des ressources et ne recevait en contrepartie que 9% des dépenses régionales budgétisées"¹⁸.

L'exploitation est donc si massive qu'elle provoque une réaction en retour de la société rurale globale. Comme le dit P. Jacquemot, la redistribution de ces bénéfices extorqués est partagée entre les fonctionnaires au nombre de 40,000, l'armée et les commerçants. Et c'est justement l'identité des bénéficiaires du travail paysan qui indique la nature et la portée des contre-pouvoirs dont il est question.

Dans l'état actuel de la politique étatique menée depuis l'indépendance, il est impossible au monde paysan de s'organiser de façon autonome pour découvrir le niveau de son exploitation, et encore moins pour formuler des doléances ou défendre ses intérêts. Lorsque nous parlons donc de contre-pouvoirs, il s'agit de réactions informelles et sporadiques par lesquelles le monde rural se protège de l'influence excessive de l'Etat. Nous verrons cependant que ces contre-pouvoirs peuvent aller au-delà de simples réactions passagères et se muer au fil du temps en de véritables systèmes sociaux dont l'évolution lente mais profonde se fait en totale contradiction avec les objectifs gouvernementaux.

1./ Les contre-pouvoirs économiques

Dictés par l'instinct de survie, ils ont été les premiers à se mettre en place depuis le régime socialisant de Modibo Kéita. Notamment, l'une des luttes les plus éprouvantes que celui-ci ait eues à mener jusqu'à sa chute a été celle qu'il a déclarés aux "trafiquants", mettant dans cette bataille désespérée tout le poids des services de douanes et de police, des médias, mais surtout celui de sa milice. Nous nous souviendrons toujours de cet épisode à peine croyable dont nous avons été le témoin en 1966 dans notre propre village. Le flux du trafic ayant fait l'échec de la SOMIEX (Société Malienne d'Import-Export), seule habilitée à importer et à commercialiser les produits essentiels sur toute l'étendue du territoire nationale, les marchandises de cette dernière restaient en souffrance, menaçant constamment de se détériorer. C'est alors que pendant l'hivernage 1966, celles-ci furent imposées aux paysans. Certains se trouvèrent dans la situation extraordinaire de devoir payer des pneus, chambres à air et autres pièces de bicycles alors qu'ils ne disposaient même pas de vélo!

Pendant la même période, les paysans firent échec aux champs collectifs auxquels le régime tenait tant pour démontrer la justesse de

son option. Dans la région qui est la nôtre, chaque jeudi de la semaine était réservé à l'entretien de ce champ. Précisément, ce jour vint à être considéré par les paysans comme jour férié. Les villageois se rendaient au champ collectif à dix heures passées pour retourner chez eux après deux ou trois heures de parodie de culture.

De façon plus constante, "la résistance paysanne se manifeste dans les périodes les plus dures par le repli sur les cultures vivrières qui assurent tant bien que mal l'auto- subsistance: le taux de prélèvement du surplus ayant atteint un niveau insupportable, la chute de la production commercialisée qui en est la sanction fait baisser le surplus à extorquer"¹⁹.

Y. G. Kébé fait remarquer que le circuit informel des céréales (c'est-à-dire les marchés parallèles avec lesquels les paysans préfèrent traiter plutôt qu'avec l'Etat) peut être estimé à 60% du marché total.

Mais l'exemple le plus intéressant (parce que apparemment paradoxal) que l'on puisse donner de la mutation de la société rurale malienne vers une autonomie de plus en plus certaine par rapport à l'état, c'est certainement celui des ton villageois. De temps immémorial, l'organisation villageoise malienne repose sur le ton. Celui-ci est un système d'organisation simple dont l'efficacité réside dans sa forme associative. Le ton, association de services et d'activités culturelles, peut regrouper les jeunes d'un groupe d'âge (flan ton) ceux d'une même génération (les différents jominin ton); inclure flan ton et jominin ton confondus (cébalen ton) si ce n'est, pour des occasions exceptionnelles, regrouper le village tout entier (Dugamaa ton). A côté de ces ton structurels peuvent en naître d'autres au gré des événements. Chaque groupe folklorique musical peut posséder son association propre. Les petits-fils de tel vieillard ou de telle vieille en difficulté peuvent former un ton pour lui venir en aide. De plus, il faut signaler que les ton ne sont pas l'apanage du groupe masculin. Ils fonctionnent en aussi grand nombre et aussi bien du côté des femmes du village.

Les tons ont pour fonction première de prêter leurs services à ceux qui en auraient besoin aussi bien dans les travaux champêtres que dans les travaux domestiques (surtout les travaux de bâtiment). Ils sont donc fonctionnels tout le long de l'année et organisent en saison sèche des activités culturelles hautes en couleur avec l'épargne qu'ils ont réalisée sur leurs gains.

Peut-être conscient du fait que l'échec de la politique agricole du régime socialisant venait de ce que cette structure villageoise avait été

ignorée, l'UDPM (Union Démocratique du Peuple Malien), nouveau parti politique qui, depuis 1979 définit la politique du régime affirme en p.45 de son document de référence (Réflexions sur un programme du Parti): "Soucieuse de coller ses actions aux réalités de notre pays et rejetant tout éclectisme, l'UDPM fondera sa politique de coopération sur le ton villageois, qui n'est autre que le ton traditionnel vivifié et adapté aux objectifs de développement économique, social et culturel du Mali".

Ceci explique que les ODR n'ont pas seulement pour vocation d'encadrer et de commercialiser, mais se voient chargées d'organiser le monde paysan. Notamment, elles doivent alphabétiser en langues nationales et suggérer la mise en place graduelle des infrastructures et des compétences qui permettraient aux paysans d'assurer eux-mêmes leur propre encadrement technique et, plus tard, la commercialisation de leurs produits.

De toutes les ODR, la CMDT (Compagnie Malienne des Textiles) est à ce jour la plus avancée. Plus de la moitié des villages de Mali-Sud ont aujourd'hui accédé au statut enviable d'"A.V.", c'est-à-dire d'Association Villageoise. Car pour être promu à ce statut, le village doit avoir fait la preuve de son autonomie administrative vis-à-vis de la CMDT, tout au moins en ce qui concerne la campagne de commercialisation. Elle doit au préalable disposer de magasins de stockage adaptés, de ses balances de pesée, de son centre d'alphabétisation etc... Mais surtout, les frais de campagne ristournés aux paysans constituent pour les caisses des "A.V." des moyens véritables de promotion et surtout d'autonomie par rapport à l'état. Evidemment, l'Etat exige que ces caisses financent la construction des maternités et des écoles villageoises. Mais une fois ces investissements terminés, les "A.V." disposent de leurs pharmacies, de stocks de céréales achetés en vue de la soudure, de forages et de séchoirs parfois. Il arrive que deux, trois ou quatre "A.V." mettent leurs fonds en commun pour construire des ponts, bitumer des routes. Dans le cercle de Koutiala, un village est même parvenu à s'électrifier grâce à ses fonds propres!

Si bien qu'on peut juger de la nature de cette prophétie de Kary Dembéle en 1981, soit seulement deux ans après la politique des ton préconisée par l'UDPM: "... Ce qui est certain c'est que le fer de lance sur lequel repose cette politique, à savoir le ton villageois n'est pas solide. Ce sont des châteaux de cartes: les jeunes y voient une sorte d'exploitation du cadet par l'aîné, de sorte que beaucoup de jeunes abandonnent très tôt les ton. Par ailleurs l'exode rural des jeunes consécutif à la domination de plus en plus grande du mode de

production capitaliste sur nos campagnes, prive les ton des forces productives réelles; si bien qu'ils tendent à être composés uniquement d'enfants..."²⁰.

Le chercheur doit faire preuve de beaucoup de prudence, mais surtout d'autant de réserve qu'il engage idéologiquement et politiquement son analyse. La fausseté à ses yeux de l'option d'un régime ne doit pas signifier pour lui que ce régime est incapable de rien réussir. La réussite évidente de la politique des "A.V." (pour Mali-Sud précisons-le bien) est d'autant plus troublante qu'elle convainc les paysans de la grande sollicitude du régime pour leur cause, alors qu'en réalité, ce qui leur apparaît là comme des indices de progrès ne sont que des miettes qu'on daigne bien leur concéder afin de les encourager à produire pour mieux les extorquer.

Mais ce résultat étant tout de même tangible pour le paysan, on peut bien se demander en quoi les "A.V.", pratique traditionnelle "vivifiée" par les pouvoirs d'état, peuvent constituer pour ceux-ci un contre-pouvoir. Ce ne sera pas la première fois qu'un régime aura donné à ceux qu'il exploite les moyens de leur libération. Or, la soumission du monde rural est évidemment due à une impuissance qui le maintient dans des liens de dépendance humiliants par rapport aux pouvoirs d'état. La dépendance la plus insupportable est la dépendance alimentaire. Pendant ces dernières années, la sécheresse n'a pas épargné les paysans de Mali-Sud. La grande innovation, c'est qu'ils n'ont pas compté un moment sur l'aide gouvernementale. La plupart des "A.V." avisées ont constitué des stocks, permettant aux plus démunis d'y avoir recours aux périodes les plus critiques et à des conditions d'achat ou de crédit extrêmement avantageuses²¹.

Ce que nous disons pour le Mali-Sud est également vrai à des échelles variables pour certaines sociétés rurales de l'Opération riz de Ségou, Mopti et Sikasso. Le contre-pouvoir que constitue cette autonomie économique naissante se situe aussi au niveau psychologique.

2./ Le contre-pouvoir psychologique

C'est sans doute à ce niveau que l'on peut percevoir la mutation la plus essentielle de la société rurale malienne. Pour apprécier à sa juste mesure la profondeur de cette révolution de la conscience paysanne, il est important d'avoir en mémoire le passé politique du Mali depuis l'ancien empire de Soundiata Keita au 13^{ème} siècle jusqu'à nos jours²². En effet, depuis plus de 700 ans, la conscience d'une unité nationale

réelle a été forgée et maintenue par toute une série de conquérants (Soundiata Keita, Kankou Moussa, Biton Mamary Coulobaly, Babemba Traoré, etc.) dont l'image continue de fasciner les Maliens grâce surtout à une littérature mythique et généalogique fortement conservée et constamment enrichie par la puissante caste des griots et, il n'y a pas encore longtemps, des chefs fétichistes²³. Il s'ensuit que le féodalisme comme mode de pouvoir et de production n'est pas seul responsable de la personnalisation de l'essence de l'Etat. Au Mali, le chef politique n'est pas seulement d'essence divine comme dans les vieilles monarchies d'Europe, il est aussi d'essence cosmique. Parce qu'il a pu accéder au pouvoir, il est parvenu à réaliser par et dans sa personne l'équilibre exceptionnel et dangereux de la nature entière. S'opposer au monarque, c'est menacer cet équilibre et, par voie de conséquence mettre en péril la vie de la communauté entière.

Or, la réalité de ce discours savant, c'est qu'au Mali comme dans beaucoup d'autres états africains, le féodalisme se caractérise de façon globale par une brutalité inimaginable du souverain et de son administration vis-à-vis du monde paysan. La cruauté des méthodes de gouvernement du peuple a causé un traumatisme d'autant plus profond dans les sociétés rurales que malheureusement ces méthodes se sont appliquées 700 ans durant sur les mêmes classes sociales.

Il est honteux pour le nationaliste que nous sommes d'entendre les paysans dire que la seule période de paix et de justice que le Noir ait connue fut la période coloniale. Ce n'est absolument pas un hasard si Modibo Kéita s'est complaisamment laissé installer par la caste griotique comme descendant direct de Soundiata Kéita, Moussa Traoré de Tilmaghan Traoré; ailleurs Sékou Touré comme petit-fils de Samory Touré. Le résultat, c'est que du point de vue de la démocratisation du pouvoir, nul ne songerait aujourd'hui à nier que l'accession du Mali à l'indépendance a été une sérieuse régression par rapport par exemple aux années 1956-57 période au cours de laquelle le Mali comptait au moins une vingtaine de partis politiques.

Ainsi le chef et son administration gouvernent comme dans le passé à l'image des Mausa du Mali. Après la chute de Modibo Kéita et de sa milice, le régime militaire, qui veut bénéficier de la même, aura été pris de cours par les événements. La chute du prestige du chef et de ses hommes de main est vertigineux d'autant plus que le régime militaire est incapable de payer ses fonctionnaires pendant plusieurs mois. Ces derniers, gardes républicains, infirmiers, enseignants, voire chefs d'Arrondissement et Commandants de cercles sont abandonnés à eux mêmes sous la risée des paysans qui déconsidèrent leurs pratiques

d'escroquerie pour survivre.

La preuve est donc faite que le contre-pouvoir le plus significatif de ces vingt six ans d'indépendance est la conquête progressive d'une autonomie de pensée et de jugement qui cède à la terreur permanente du pouvoir et de ses hommes. L'incapacité chronique de l'Etat à dénouer les crises inhérentes à son propre fonctionnement à laquelle s'ajoutent la crise mondiale et la crise de confiance des populations ont accéléré la chute de tous les mythes qui, dans le passé, fondent son autorité.

Cette révolution des consciences dans les sociétés rurales du Mali a donné naissance à un autre contre-pouvoir dans le domaine politique.

3./ Le contre-pouvoir politique

Comme pratiquement dans tous les pays africains, l'accession à l'indépendance avait fait naître un immense espoir au sein des masses. La personnalité même du Président Modibo Kéita, le charisme certain dont il jouissait sur la scène internationale avaient poussé les Maliens à s'investir réellement dans la politique socialiste du régime avant que celui-ci, trop impatient ne songe à rompre avec la pratique de la consultation des masses. Lorsqu'aux premières heures d'indépendance, il s'avéra que tout était à bâtir, les campagnes maliennes se transformèrent avec enthousiasme en d'immenses chantiers d'investissements publics; et entre 1960 et 1964, des routes furent créées; des bâtiments publics construits. En 1965, les populations cōtiserent massivement afin d'installer, avec l'aide de la Chine, l'un des plus puissants postes émetteurs du continent africain.

En 1968, le coup d'état militaire fit renaître des espoirs déçus. Les Maliens redirent leur confiance à la nouvelle équipe et ovationnèrent pour la seconde fois le Président Moussa Traoré comme un héros lorsque, le 28 Février 1978, il procéda à l'arrestation de trois officiers importants (Kissima Dounkara, Karim Dembélé, Tiékoro Bagayogo) accusés de s'opposer à l'ouverture démocratique du régime²⁴.

Pourtant, l'UDPM, parti politique mis en place par le régime militaire depuis Mars 1979 n'a jamais fait mystère de son échec en matière de mobilisation et de son inaptitude congénitale à trouver des solutions aux nombreux problèmes posés à l'état malien. Certes, l'ensemble des 6 millions de paysans maliens sont, par la volonté des autorités membres du parti. Mais l'indifférence totale des paysans vis-à-vis des mots d'ordre inlassablement ressasés indique à quel point ils ne se sentent nullement concernés. Or, dans la mesure où le parti est

l'organe politique fondamental des structures officielles, la mise en échec de celui-ci par la paysannerie montre aux autorités que l'arme la plus redoutable de celle-ci n'est peut-être pas la révolution violente, mais l'indifférence paralysante qu'elle a cultivée avec maestro au cours de sa très longue expérience d'exploitée.

Pour conclure cette partie, il faut donc redire la grande difficulté scientifique d'étudier le monde rural. Ici, l'effort d'imagination et la prudence le cèdent aux discours classiques bien bâtis sur d'autres groupes socio-professionnels. Ainsi, au Mali, la réalité paysanne diffère désormais en fonction de critères non plus seulement ethniques, c'est-à-dire culturels, mais plus fondamentalement en fonction des zones de production, encadrées par les ODR. S'il est vrai que d'un point de vue global la misère paysanne est grande il existe çà et là des îlots de mieux-être. Dans les années à venir, la contradiction sera voyante entre des paysans possédants et des paysans démunis; c'est-à-dire entre une bourgeoisie paysanne et des ouvriers agricoles en voie de prolétarianisation de plus en plus rapide.

Cependant, quelle que soit la situation du paysan en République du Mali, il secrète aujourd'hui des contre-pouvoirs; soit par dépit, soit par un processus d'autonomisation progressive. Dans les deux cas, le paysan s'occupe de ses affaires, convaincu que l'état malien ne peut rien lui apporter.

III. L'intelligentsia Malienne entre Crise Economique et Crise Politique

Dans la première mouture de ce document, nous avons opposé la ville à la campagne malienne dans la recherche de solutions alternatives à l'état de crise. Après réflexion, nous lui préférons l'angle d'analyse actuelle. Nous nous en expliquons.

D'abord, en l'état actuel de la caractérisation de la ville malienne, il n'est pas sûr qu'elle puisse être opposée à la campagne avec des critères vraiment pertinents. En effet, les villes maliennes comptabilisées comme telles dès le seuil de 5.000 habitants sont plus des villes agricoles que des villes modernes.

Ensuite, le taux d'urbanisation du Mali laisse apparaître que le développement vertigineux des grandes villes maliennes en si peu de temps relève d'un exode rural qui ne change pas fondamentalement les caractéristiques économiques et culturelles de celles-ci. Le taux d'urbanisation du Mali a grimpé de 388% en 19 ans! Or, en 1979,

alors que le total des personnes urbanisées s'élevait à 1.054.502 personnes, seuls 200.000 résidants urbains disposaient d'une activité apte à assurer leur subsistance. Il y a donc eu une explosion démographique en disproportion de la capacité d'accueil des villes. La ville s'est ruralisée pour ainsi dire puisque, des emplois n'ayant pas été créés, sa structure professionnelle n'a pas varié.

Enfin, lorsque nous avons confronté notre travail à ceux de nos collègues chercheurs des autres pays africains invités à la conférence du CODESRIA, l'unanimité a été faite qu'au fond, les villes africaines dans cette situation de crise avaient pratiquement des comportements identiques (chômage, violences et escroqueries diverses dans le groupe masculin; abandons de foyers, commerce, tontines d'entraide et prostitution dans le groupe féminin).

Les villes maliennes ont donc certes leur originalité, mais en définitive, celle-ci n'est pas assez illustrative de notre propos. Celui-ci s'intéresse en effet à des groupes de consciences qui réfléchiraient non seulement l'état de la crise économique mondiale, mais bien plus profondément celui de la crise structurelle de l'état malien. Or, même si en des occasions exceptionnelles, le sort des citadins leur apparaît comme lié, ce n'est pas présentement le cas; car le moins que l'on puisse dire, c'est que les villes ne peuvent être constituées que de groupes de consciences différents dont les intérêts sont évidemment opposés. Le concept de villes au plan sociologique est donc plus une abstraction qu'autre chose.

L'intérêt de l'intitulé ci-dessus c'est d'indiquer clairement un groupe de personnes dont le sort est lié bien plus par une éducation commune que par un statut juridique et administratif. Le terme intelligentsia n'est peut-être finalement pas heureux, puisque le Larousse le définit comme étant "la classe des intellectuels", alors même que la définition de l'intellectuel pose problème.

Nous prendrons le concept d'intelligentsia au sens le plus fermé. Il s'agira pour nous de tenter de déterminer la position des producteurs d'idées face à la situation actuelle. C'est donc par l'intermédiaire de cette élite que nous atteindrons le grand nombre des salariés et fonctionnaires qui participent à ce débat d'idées en tant qu'auditoire actif ou désintéressé de ce que nous appelons l'intelligentsia. La perception que celle-ci a de la crise actuelle est largement motivée par le passé politique dont elle peut se prévaloir sous le régime socialiste.

1./ La situation de l'intelligentsia malienne sous le régime socialiste

L'option politique et idéologique du régime socialiste de Modibo Kéita a été pensée et constamment fécondée par la première génération d'intellectuels issus des écoles coloniales françaises. L'engouement puissant pour le socialisme s'explique par un nationalisme ardent qui avait hâte d'en finir avec le souvenir humiliant de la colonisation sur cette terre qui, depuis le 13^{ème} siècle, avait toujours cultivé un impérialisme guerrier en direction des pays voisins. Le rêve d'une Fédération de tous les états de l'ancienne A.O.F.; puis plus modestement d'une Fédération avec l'état du Sénégal en 1959 cache mal cette volonté des Intellectuels maliens de répéter l'Histoire.

Après l'éclatement de la Fédération du Mali à la grande déception des dirigeants maliens (et au grand soulagement des Sénégalais), les huit années que va durer le régime socialiste seront un dialogue constant entre les intellectuels et Modibo Kéita. Ce duel d'idées a souvent été violent mais les ruptures entre le pouvoir et ses interlocuteurs n'ont jamais été que des occasions nouvelles pour resceller un mariage où chaque partenaire était condamné à la vie commune. Chacun sait qu'un intellectuel ne se sent vivre que par ce pour quoi il a été formé: la confrontation incessante de schémas opératoires dont l'issue lui semble déterminer le destin des communautés et du monde.

De ce point de vue, la situation économique modeste du Mali lui semblait être un défi constant lancé à son imagination et à sa capacité d'innovation. De sorte que les problèmes matériels et financiers difficiles qui régissaient la condition de l'intelligentsia malienne passaient pour secondaires à côté de la bataille idéologique et politique qu'elle s'était elle-même déclarée.

La situation va changer du tout au tout avec la prise du pouvoir par les militaires.

2./ L'intelligentsia malienne face à la crise économique

Quelques jours seulement après le coup d'état aussitôt dénoncé par les étudiants de l'Ecole Normale Supérieure, le Président Moussa Traoré pour calmer et rassurer les intellectuels convoquait une conférence des cadres afin de poser les jalons d'une Charte possible. La réflexion d'un enseignant au cours de cette conférence résume à la perfection l'état d'esprit de l'intelligentsia face au nouveau pouvoir. En affirmant devant le Chef de l'Etat que "Laisser les militaires diriger un Etat, c'est

investir un menuisier de la responsabilité d'opérer un malade²⁵, cet enseignant traduisait tout le scepticisme des intellectuels dans la capacité des militaires à "faire de la politique".

Malgré la campagne d'explication menée par les militaires auprès des lycéens et des étudiants, ceux-ci se mettent en grève en Avril 1969, suivis par leurs camarades en France qui, en Juillet et Décembre de la même année y occupent l'ambassade du Mali pour contester le régime militaire. L'U.N.T.M. (Union Nationale des Travailleurs du Mali) restée farouchement attachée au socialisme est dissoute en Octobre 1969. La grève générale de Février 1971 déclenchée conjointement par les enseignants et les étudiants fait déborder le vase. La dureté de la répression tient à la profonde humiliation infligée aux intellectuels. Les chefs du mouvement sont envoyés dans des "camps de redressement" et contraints, après des conditions éprouvantes de détention, de chanter l'hymne militaire à la radiodiffusion nationale. A partir de cet incident, la rupture est définitivement consommée entre militaires et intellectuels²⁶.

Entre-temps, la sécheresse s'est installée. Entre 1970 et 1974: "On estime à environ 100.000 les personnes qui ont trouvé la mort par sous-alimentation dans les six régions du Mali. Dans certains campements du nord du pays, plus de 50% du cheptel a disparu par suite du manque d'eau et de fourrage"²⁷. D'autre part, "En 1978, le commerce extérieur a accusé un déficit de plus de 50 milliards de francs maliens, et le taux de couverture des importations (93 milliards) par les exportations (42 milliards) a été inférieur à 50%. "Cette situation est la conséquence de la crise pétrolière et de la hausse générale des prix qui en résulte, de l'accroissement des importations de céréales et de denrées alimentaires consécutives aux séquelles de la sécheresse, de l'augmentation des importations de biens d'équipement nécessaires à la construction du barrage de Selingué, de la baisse des prix du coton sur le marché mondial et de la diminution des tonnages exportés d'arachides et de coton"²⁸.

Ne comptant que sur le revenu paysan et les aides extérieures pour corriger une situation aussi catastrophique, le régime militaire ne peut que s'engager dans une fuite en avant qui débouche en 1979-80 sur son incapacité désormais structurelle à payer les salaires à temps échu à plus de 40,000 fonctionnaires. La période tombe d'autant plus mal qu'elle coïncide avec la mise en place, en Mars 1979, du nouveau parti unique: l'U.D.P.M. L'histoire des relations de celui-ci avec l'intelligentsia malienne passe par trois phases:

(a) *La phase du défi*: Ce n'est pas un hasard si en 1979, l'U.D.P.M. naît avec le mot d'ordre suivant: "L'homme qu'il faut à la place qu'il faut". On ajoute volontiers que les diplômés ne sont pas une référence suffisante pour militer dans le nouveau parti et que celui-ci cherche ses hommes dans le peuple même et ceux qui en sont proches par l'expérience et les idées. En fait, l'U.D.P.M. est née sur des braises incandescentes car non seulement la rancœur des humiliations est encore vivace dans le cœur des intellectuels, mais comme dans un dernier sursaut de désespoir, les étudiants ont une fois de plus tenté de renier les militaires en 1979-80. Réponse immédiate: la fermeture des établissements scolaires et la suspension des bourses pendant plus d'un an.

Les militaires croient pouvoir appuyer le parti sur l'intelligentsia moyenne: enseignants et infirmiers "de brousse" et sur quelques "paysans pilotes" aidés des commerçants. C'est à la limite si, pour militer dans le parti, on n'exige pas un diplôme inférieur au baccalauréat.

Les intellectuels prennent la mesure pour ce qu'elle est: un défi et s'abstiennent de toute prise de position d'autant que la restriction brutale du niveau de vie leur apparaît comme une préméditation du pouvoir pour les obliger à composer.

(b) *La phase de la contrainte*: En Mars 1981, Moussa Traoré, devant l'incapacité du parti à mobiliser les intellectuels, convoque un congrès dit de "clarification". Le constat le plus sévère, c'est que les dirigeants du parti ne sont pas représentatifs des différentes composantes du peuple malien et qu'il reste exsangue de l'absence en son sein des "forces vives de la Nation". Apparaît alors la célèbre phrase de "To be or not to be". Les cadres du parti considèrent en effet qu'il est aberrant de nommer aux postes importants de l'Administration des intellectuels froids et même hostiles à l'U.D.P.M. Autrement dit, ou on milite, auquel cas on peut s'attendre aux faveurs du régime; ou on ne milite pas, avec toutes les conséquences que cela peut avoir sur la carrière professionnelle et administrative. Or, "il semble que depuis, le fossé se soit agrandi entre le peuple et ses dirigeants dès lors que ces derniers pour le contraindre à adhérer au parti unique ont eu recours à des méthodes détestables relevant de la répression morale et administrative: ainsi, à l'heure actuelle, un honnête citoyen ne peut prétendre acheter un terrain d'habitation ou même, en certains cas, des vivres pour nourrir sa famille s'il ne possède pas "sa" carte du parti. De même ne peut-il songer à un poste de responsabilité dans l'administration quand il n'a pas apporté la preuve de son engagement et de sa loyauté envers le

parti"²⁹.

On comprend donc que, malgré le congrès de la "clarification et de la dynamisation de 1981"; celui de la "redynamisation" de 1982; du "renouveau" de 1983, Moussa Traoré ait avoué au congrès du 31 Mars 1986: "De sérieuses insuffisances ont été décelées dans la dynamique interne du parti, dans ses capacités de mobilisation et de sensibilisation aux objectifs du parti, dans son aptitude à identifier et à prendre en charge les aspirations de l'ensemble des forces vives de la nation"³⁰. Aussi en a-t-il profité pour lancer une sorte de baroud d'honneur dans l'idée d'élaboration d'une "charte d'orientation nationale".

(c) *L'appel aux intellectuels*: En réalité, le régime militaire a toujours su où achoppait son différend avec l'intelligentsia: son refus désespéré de faire appel aux ressources de celle-ci, mais surtout son incapacité chronique à moraliser la vie publique. Rappelons simplement qu'un Professeur d'enseignement supérieur ou un médecin touche 50.000 franc CFA par mois; l'un des salaires les plus bas du Continent africain. Ajoutons que ce revenu de misère n'est perçu qu'un mois sur trois et on comprendra toute la rancœur de l'intelligentsia à voir les dignitaires du régime accumuler des villas mirifiques, des voitures à gros cylindres et des maîtresses.

D'où, répétons-le, "la crise économique mondiale" paraît ici, aux yeux des intellectuels occultée par la crise plus réelle et profonde de la gestion de la société malienne. Lorsque Moussa Traoré, décidément sincère, affirme en Mars 1986 que l'administration "souffre de nombreuses plaies telles que la corruption, le népotisme, l'absentéisme; des maux qui engendrent la défiance des populations à son égard et qui la rendent incapable d'assumer correctement les tâches qui lui sont assignées"³¹, il ne va pas au bout de sa pensée. Ce qu'il a avoué en une occasion plus intime: "Les Maliens font semblant de travailler, et moi, je fais semblant de les payer" serait plus proche de la réalité si la réflexion était inversée. En effet, il est bien connu qu'un pays qui refuse de payer son administration légalise ainsi tous les maux que le Général Traoré dénonce.

Par décision n° 19/UDPM en date du 16 Mai 1986 cependant, le Chef de l'Etat a mis en place une commission chargée de l'élaboration de la charte d'orientation nationale et de conduite de la vie publique. Pas moins de 42 experts pluri-disciplinaires ont pour tâche de bâtir un document au "contenu quasi-encyclopédique" sur les réalités maliennes afin que par référence au plus large esprit démocratique possible que celui-ci insufflera à l'UDPM, tous les Maliens sans exclusive aucune se

réconcilient enfin au sein du parti. Notamment, ce que celui-ci recherche à présent avec ardeur, ce sont "des hommes neufs qui allient la compétence à l'intégrité intellectuelle, morale"³².

Pour prouver enfin sa bonne foi ainsi que sa détermination de changements profonds, outre d'innombrables remaniements ministériels, le régime a annoncé une vaste campagne anti- corruption et de moralisation de la vie publique. Les intellectuels se souviennent cependant de la commission d'enquête de 1978; des lois 39 AN-RM et 40 AN-RM de 1982 contre l'enrichissement illicite et la corruption qui n'ont jamais abouti à quoi que ce soit de concret.

Par ailleurs, tout le problème est plutôt de savoir si, en même temps que cette campagne verbale de charme, quelque chose de concret a été faite ou même est projetée pour améliorer la situation morale et matérielle de l'intelligentsia; bref, s'il existe un motif nouveau pour que celle-ci fasse soudain preuve de sollicitude pour un régime auquel elle n'a jamais pardonné d'avoir déçu le rêve d'un Mali que le Président Modibo Kéita "ambitionnait de hisser (...) au rang de grande puissance inter- africaine"³³.

Les mesures actuelles indiquent plutôt le contraire. Les pressions des institutions financières internationales et l'interventionnisme américain semblent aujourd'hui avoir provoqué un seuil de saturation qui impose la lutte organisée comme seul moyen d'en finir. En effet, l'avalanche des dictats de l'extérieur apparaît comme une sorte de défi qu'un certain monde extérieur acoquiné au régime de Bamako lance à la capacité des Maliens de réagir. Rappelons rapidement quelques-unes de ces mesures:

- Septembre 1983: la pression du FMI pousse au concours d'entrée à la Fonction Publique. Du jour au lendemain, des milliers de jeunes diplômés se retrouvent en chômage; réduits à exercer des métiers dérisoires comme plantons, gardiens, laveurs de voitures, etc... pour survivre et aider leurs parents consternés.

- Octobre 1984: le concours d'entrée à la Fonction Publique n'a pas suffi. Les rares lauréats au concours devront subir une formation militaire de six mois (théoriquement, car pratiquement les premières promotions ont totalisé deux ans!) suivie de dix huit mois de service national retribus à 5.000 francs CFA/mois.

- Août 1984: le retour du Mali au sein de l'U.M.O.A. oblige à la division du salaire déjà misérable par deux. Le coût de la

vie augmente au contraire avec la plus grande accessibilité aux marchés des pays limitrophes.

- 17 Septembre 1985: à la suite de la visite au Mali en Mars 1985 du Vice-Président américain, Mr. Georges Bush, un programme économique est signé entre l'USAID et le Gouvernement malien comportant un volet d'incitation au "départ volontaire" des fonctionnaires de la fonction publique. Le programme prévoit un départ de 600 agents en deux ans, mais l'objectif final est de dégraisser la fonction publique de 1.250 "départs volontaires" vers le secteur privé. Pendant ce temps, aux 357 licenciés de la SOMIEX en 1983 viennent s'ajouter 150 autres.

Parce que toutes ces mesures sont perçues par l'intelligentsia comme une tentative du régime de se débarrasser d'elle comme d'une plaie qui gangrène le corps social, la lutte politique, abandonnée depuis les événements de 1971 et 1979-80 semble de plus en plus être la seule solution pour s'en sortir.

3./ L'intelligentsia et la lutte politique

La crise structurelle des indépendances ajoutée à la crise économique mondiale ont donné peu d'exemples d'échec comparables à celui du Mali. Pour exprimer de telles situations, les Maliens ont coutume d'employer une expression qui aujourd'hui traduit toute la réalité de la leur: "choir du faite du rônier au fonds du puits". Malgré tout, il existe peu de pays africains qui semblent autant résignés devant leur sort. On peut même affirmer qu'à situation égale, le Mali est pratiquement le seul pays africain qui ne dispose pas d'opposition politique organisée et connue. A juger donc de l'apparence, les Maliens mériteraient bien leur sort.

Les analyses ci-dessus que nous venons pourtant de faire, autant en ce qui concerne le monde paysan que celui de l'intelligentsia prouvent le contraire. Non seulement les Maliens se battent mais l'arme qu'ils ont privilégiée, toutes classes sociales confondues, a atteint sa cible: le parti au pouvoir (selon l'expression d'un journaliste de Sanfin) reste "une coquille désespérément vide".

Le boycottage d'un régime n'est cependant pas, en Afrique en tout cas, le meilleur moyen de se débarrasser de celui-ci. Il est donc légitime de se demander si cette sorte de politique de l'usure n'est pas précisément à l'origine de l'exceptionnelle longévité du régime de Bamako. On peut remarquer cependant que partout en Afrique, la crise économique mondiale et la gestion des affaires publiques offrent

aujourd'hui le spectacle de populations radicalement prises à la gorge et que c'est pourtant en ces temps de désarroi et d'incertitude que les soulèvements populaires sont les plus rares. On apprécie ainsi la profondeur de la réflexion du Pr. Ali El Kenz d'Algérie à propos de ce constat apparemment curieux: "On ne se révolte pas n'importe quand et n'importe comment". Il serait plus sage de faire appel aux spécialistes de la psychologie sociale pour expliquer le phénomène de la stabilité sociale au moment des crises les plus profondes (ceci évidemment en fonction de l'identité des différentes communautés nationales).

Nous pouvons quant à nous constater que certaines formes de répression (pas toujours violentes au sens spectaculaire du terme) peuvent créer chez certains peuples des traumatismes durables. Nous ne savons pas s'il n'en est pas ainsi de la volonté de puissance brutalement déçue des Maliens par la faute d'un régime qui a reprimé sévèrement (et qui continue de le faire bien entendu) de 1969 à 1979 "les forces vives de la nation" qu'il appelle de tous ses voeux à présent.

Le traumatisme tendrait cependant à s'estomper. La légendaire impossibilité des Maliens à s'entendre sur aucune entreprise tendrait à être démentie par les faits. Les noms de partis politiques d'opposition dotés de leurs revues s'imposent de plus en plus dans l'opinion malienne. Citons le P.M.T. (Parti Malien du Travail), l'U.C.M. (Union des Communistes Maliens), le F.D.P.M. (Front Démocratique des Patriotes Maliens); des organisations de masse comme l'UNEEM (Union Nationale des Elèves et Etudiants Maliens) dont les cellules régionales recommencent à s'organiser; le C.D.L.D.M. (Comité de Défense des Libertés Démocratiques au Mali). Des revues comme JE et SANFIN sont de plus en plus diffusées.

Conclusion

"Les effets sociaux de la crise économique sur les pays africains" (thème général proposé par le CODESRIA) nous aura permis de régler notre compte avec un certain universalisme économique ("la crise mondiale") qui, pour être importante, n'est pas scientifiquement pertinente dans l'explication des difficultés rencontrées aujourd'hui par les pays africains. Ce qui ne veut pas dire que nous rejetons le principe de l'extraversion de l'économie africaine. Mais c'est le fait même de la dépendance qui est ici en cause, dans la mesure où celle-ci semble désormais incontournable. Or, qu'il s'agisse de maintenant ou, d'ici une quinzaine d'années de l'an 2.000, il faut préciser que la sensibilité aux mouvements de dépression économique et sociale est conditionnée par un état antérieur de fragilité structurelle. Et plus les remanences de cette

fragilité sont profondes, plus vite adviennent les crises, plus longtemps elles perdurent.

Partout dans nos pays, l'héritage de la colonisation était déjà assez lourd pour que ne vînt pas s'y greffer notre propre inaptitude à gérer le peu qui nous restait. C'est pourquoi la crise économique mondiale ne peut, en toute bonne foi, n'être qu'un prétexte à juger de nos capacités intrinsèques à nous gérer nous-mêmes. Ainsi, on oublie trop souvent que cette crise mondiale, véritable exutoire, n'a pas la même ampleur sur toutes les économies en développement du monde. Dans nombre de pays asiatiques, son incidence a été pratiquement nulle.

Depuis maintenant une quinzaine d'années, les pays sous-développés d'Afrique ne sont plus que des pays en réalité assistés. Or, comme le dit Florence Vidal: "De quelque façon qu'on l'examine, la condition d'assisté ne peut être, on le sait, que psychologiquement inauthentique et impure. Pour en sortir, un seul moyen: la sévère, drastique et douloureuse prise de conscience. Savoir enfin qui on est et comment on est devenu ce que l'on est..."³⁴

Notes

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1. P. Jacquemot: Le Mali, le paysan et l'état, Paris, l'Harmattan 1981, p. 9.

2. Y. G. Kébé: *op. cit.*, p. 99.

3. Les renseignements ci-dessous sont tirés des Marchés tropicaux et méditerranéens; n° spécial 1780 du 21 Décembre 1979.

4. 100FM étaient égaux à 1FF jusqu'au changement de monnaie en Août 1984 où le Mali adoptait le franc CFA qu'il avait abandonné en 1962.

5. P. Jacquemot; *idem*, p. 15.

6. Il est d'ailleurs significatif qu'aujourd'hui, l'Office du Niger ne compte que 35.400 ha de surfaces irriguées!

7. Au nombre de ces calamités naturelles, il faut citer celles de 1908 et 1931, (causées par les criquets et la sécheresse) qui eurent des conséquences graves.

8. Y. G. Kébé: *idem* p. 34 souligné par nous P.B.C.

9. B. Yattabari: "Notes sur la commercialisation des céréales 85/86". Sanfin n° 22/23 Avril-Mai 1986, pp. 12-13.
10. Y. G. Kébé: *idem*, p. 58.
11. Y. G. Kébé: *idem*, p.64.
12. B. Yattabari: "La chute des cours du coton". *op. cit.*, p. 12.
13. B. Yattabari: *ibidem*.
14. Cf. Sanfin: *ibidem*.
15. Sur cette question, les études menées au Sénégal sont fort nombreuses. On peut citer A. B. Diop à qui nous empruntons cette expression (La société wolof, Tradition et changement - Les systèmes d'inégalité et de domination - Paris, Karthala - 1981, 355p.) mais aussi la revue "Politique africaine" qui a consacré un numéro spécial au problème.
16. Kary Dembélé: Sociologie des paysans maliens. Paris-Nanterre, thèse de 3e cycle.
17. Y. G. Kébé: *idem*, p. 70.
18. Y. G. Kébé: *idem*, p.96.
19. P. Jacquemot: *idem*, p. 18.
20. Kary Dembélé: *idem*, p. 128.
21. Pour être plus complet à ce propos, nous devons dire que le Secours Catholique a été d'un très grand appoint pour les paysans aux périodes les plus dures. Quarante des villages où nous avons enquêté (pour d'autres raisons) en Janvier 1985 ont avoué avoir été ainsi secourus à plusieurs reprises entre 1983 et 1985.
22. Se référer à P. B. Coulobaly: Le Mali: autopsie d'une conscience féodalo-républicaine. Ronéo, 30p.
23. Les références étant très nombreuses à ce propos, nous indiquons seulement quelques chercheurs de l'Ethonologie française: G. Dieterlen, M. Griaule, D. Zahan, G. Calame-Griaule qui ont révélé au monde l'extrême densité de la littérature mythique des Dogon et des Bambara.
24. Pour de plus amples renseignements sur tous ces points, se reporter à: Ph. Decraenne: Le Mali, Paris, PUF, 1980, 127p.

25. Nous citons de mémoire.

26. Ce qui ne veut pas dire que dès lors, l'intelligentsia baisse les bras. Il suffit de rappeler l'affaire des tracts lancés en Juin 1974 contre la nouvelle Constitution; le soulèvement estudiantin de 1979-80 pour s'en convaincre. Mais depuis 1971, le régime militaire s'est radicalisé à tel point que les contestations à son endroit deviennent de plus en plus suicidaires.

27. PH. Decraenne: *op. cit.*, p. 84.

28. PH. Decraenne: *idem.* p. 103.

29. S. Haidara: "Où va Moussa Traoré?" Africa, No.186 Août-Septembre, 1986, pp. 25-27.

30. Sigite Maason: "Les grandes manoeuvres d'une autocratie en péril", Sanfin, No. 22-23, Avril-Mai 1986, pp. 8-9.

31. Sigite Maason: *idem.* p.9

32. S. Haidara: *idem.* p. 27.

33. PH. Decraenne: *idem.* p. 122.

34. F. Vidal: Les sociétés insatisfaites. Paris, Mame, 1974, p.156 (c'est nous P.B.C. qui soulignons).

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SUMMARY

The concept of world crisis, born out of the skyrocketing oil prices since 1972/73 and the economic recession which emerged in its wake has both an economic and an ideological dimension. As an economic crisis it has found expression on the African continent in an overall challenge to national development policies. However it has reached an extent which is disproportionate with explanations given that African societies are affected in a seemingly deadly and natural fashion by their inability to undertake any structural development. From an ideological point of view, the world crisis appears therefore as a cover-up of the major errors pre-dating the current crisis.

Through the doings of non-African systems, the concept itself has turned out to be more disturbing than the actual fact. Indeed the very idea of using economic facts to define social groups does not quite conceal the wish and the ability of national communities who are transcending the crisis that it is to say that they are adjusting, changing and/or counteracting the crisis.

In this regard the example of the Republic of Mali is very illustrative. To be sure, Mali, an almost exclusively agricultural country which has been classified in the 1980 Report on World Development as one of the six poorest "low income countries" has made

drastic structural changes. Although these changes are in the interest of the State, it is the peasantry which shoulders all the heavy burden of public expenditures. In spite of all this, however, the rural world adjusted itself and changed (through the construction of psychological and political counter powers) to the extent that it now enjoys some sort of autonomy (such as creation village associations) in a number of areas, thus demystifying the very basis of the state.

As for the intelligentsia, its relationship with the military regime which, from the outset have been conflictual are presently exasperated as a result of its precarious economic plight, in addition to the conviction that no dialogue can be established with the authorities be it morally ethically or ideologically. These conflicts include student demonstrations, occupation of embassies abroad, general strike by teacher etc.

HISTORY AND THE QUESTION OF TECHNOLOGICAL DEVELOPMENT: THE TRANSFER OF TECHNOLOGY REVISITED

Gloria Thomas-Emeagwali*

Introduction

In this paper we examine some of the conceptual issues related to technology and technology transfer. We observe that at least three distinct meanings of the term 'transfer of technology' are discernible in current discourse on the subject, and that this proliferation of meanings has contributed to ambiguity in discussions. We then focus on the process of transfer of technology in its historical dimension with particular reference to early Modern Europe in the first instance. We argue that the European case is a clear example of successful transfer in the sense that the diffusion of hardware and capital goods, theoretical ideas, skills and personnel from the Middle East, North Africa, China and India, would assist in the development of the technological capability of western Europe in particular. We contrast the early European case with contemporary Third World countries where the process of transfer has been largely unsuccessful vis-a-vis the development of technological capacity. We comment on the local and systemic reasons for this situation.

Connotations of the term technology

Laudan has suggested that the term "technology" has been given such a wide range of definitions that no one scholar can work with all the concepts implied, simultaneously¹. From the wide range of definitions it is possible, however, to identify some of the major connotations of the term. It is clear, for example, that technology implies an extension of physical and biological capabilities, rational problem-solving and utilitarian activity². Furthermore, it is a product of social interaction and is usually associated with a community of practitioners in the Kuhnian sense³. It is, however,

not necessarily cumulative and there are several cases of discontinuity in development. Technology may be concerned with the creation of motive power for other tools and is of significance in the development of an economy's capacity to process raw materials and create finished products. In this case, it is a significant aspect of an economy's viability and the nation-building process in general.

There is considerable disagreement with respect to the precise relationship between science and technology. On the one hand technology is seen as "illustrative" of scientific theory and as "applied science", being the application of the fruits of science to practical ends⁴. On the other hand, there is the view that although science and technology are inter-connected, they are independent and distinct forms of knowledge⁵. The suggestion is made that whilst science searches for truth, technology is mainly utilitarian in objective⁶. What is acknowledged by both groups of scholars, however, is that the line of demarcation with respect to the two spheres of knowledge is not only "blurred" but actually indistinguishable as we focus on the more recent technologies such as micro-electronics and bio-technology⁷.

The transfer of technology as a concept

Some scholars argue that technology is not transferable, whilst others suggest that it is, and there are cases where the two opposing perspectives are contradictorily embedded in the same work⁸. It may be suggested, however, that the reason for this ambiguity in discussions on the issue relates to the fact that the concept 'transfer of technology' has varied connotations and more than one meaning as used in current literature. It may refer solely to the process of diffusion of capital goods, skills, personnel and techniques. In this case, there is the implication that such a process is both necessary and sufficient for technological development⁹. Another usage of the concept implies that 'the transfer of technology' entails the wholesale transfer of technological capability from one economy to another. Here there is the assumption that technological capability is a transportable commodity¹⁰. We consider the third usage to be more realistic, namely, the view that the diffusion of capital goods and personnel are aids in the development of technological capability which may be necessary but are not sufficient for technological development since there are a wide range of other variables which are crucial in such a process¹¹. We can therefore make the theoretical distinction between a successful transfer whereby the process contributes to the development of technological capacity of the recipient economy and one which is

unsuccessful and fails to do so. In the discussion which follows we examine the nature of the transfer in the case of early Modern Europe, and examine the reasons for un- successful transfer in the case of most of the contemporary Third World economies.

A comparative analysis of the transfer of technology in Early Modern Europe and contemporary Third World Countries

There are three reasons why we have chosen early Modern Europe as one of the areas of focus. Firstly, this region constitutes one of the most fertile illustrations of extensive importation of skills, theoretical ideas and hardware in a foundation period of Modern Science¹². Furthermore, the diffusion would contribute to the development of technological capacity for the recipient European economies and is therefore a case of successful transfer. Secondly, the present writer wishes to emphasize the significance of History in understanding contemporary phenomena through comparative analysis, an exercise which may provide valuable insights into the nation-building process. Thirdly, and more peripherally we wish to emphasize the global origins of Modern Science and Technology and so help to dispel the myth that the latter are the product of purely autochthonous growth in the case of Western Europe in particular, a myth which is buttressed in eurocentric writings on the history of science and technology by varied strategies - which range from the seemingly innocuous practice of westernizing the names of outstanding scientists such as Ibn Sina (Avicenna), al-Kindi (Alkindius) and Al-Haytham (Alhazon)¹³, to the relegation of precolonial technology of Third World peoples purely to the realm of Aesthetics and Fine Art. The North African and Asian origins of the theories propounded by the Classical Greek scientists are deliberately ignored even when acknowledged by Herodotus and other Greeks themselves¹⁴. Outstanding scientists such as Claudius Ptolemaeus (Ptolemy) are denied their North African heritage in some of the texts and there is the systematic and conscious bias in the selection of data and even in periodisation vis-à-vis the history of science and technology¹⁵. Equally effective is the tendency to Europeanize significant scientific and technological processes even when they evolve from non-European sources¹⁶. The end result is that Modern science and technology are "alienated from the historical processes and initiative of non-European peoples"¹⁷. What is worse, as pointed out by Gilliam, technological backwardness is associated with physical type and so that which is not propounded is a thesis of "immutable retardation", a perspective which has its negative psychological implications for Third World peoples¹⁸, denying them of their historic role in technological development.

In this section we focus on the process of diffusion of hardware, theoretical ideas, techniques and personnel in the case of early Modern Europe. In the course of discussion, we reflect on the local and systemic reasons why diffusion would assist in the development of technological capability in the European case as compared to the case of contemporary Third World countries where technological dependence and technological neo-colonialism prevail.

It is seldom emphasized that not only are printing, paper, clocks, gunpowder, the stirrup, the stern post rudder, the abacus and the pendulum of non-European origin¹⁹, but so too are early energy-saving devices and techniques such as the wheel, the wheel-barrow, the seed drill plough, the collar harness, the water mill and the windmill²⁰. Forbes locates the place of origin of the watermill in the mountainous regions of the Middle East from where it spread to the West, whilst the Windmill is seen to be clearly of Persian origin²¹. In the case of the watermill we note a time lag between the initial period of introduction, Roman innovation and a more generalized usage between the 12th and 14th centuries. It would seem that attempts to use gunpowder for generating energy failed and so it remained relevant mainly for military technology²². On the realm of navigational technology we note that there is large scale borrowing of devices such as the astrolabe, the lateen sail, the quadrant and the magnetic compass. It is important to note, however, that as pointed out by Parry, 'European seafarers first borrowed and imitated then developed and improved their borrowings...', an observation which seems valid for other areas of borrowing besides navigation²³. Indeed Singer has suggested that generally the technique of metal-working, glass-cutting, enamelling, pottery-making and textile weaving 'were copied for centuries in the West by craftsman who perceived nothing of such quality at home...' ²⁴.

If the diffusion of hardware and technique in the period in question is from East to West, or more accurately South to North, it is not different in the field of theoretical ideas and this would have direct implications for navigational technology and the making of precision instruments. The Astronomical tables of Al-Khwarizimi were translated into Latin, by Adelard of Bath and later Robert of Chester²⁵. Al-Battani's astronomical works would become popularised. One of the latter would be translated from the Arabic into Latin as De motu Stellarum²⁶. De aspectibus was a translation of al-Haytham's Kitab al-Manazir, which according to Lindberg would be of direct influence on Kepler in the 17th century²⁷.

The translated texts are of significance for diffusion because once translated from the Arabic they very often became textbooks in the newly emerging universities of Europe which it has been suggested, arose in direct response to meet the challenge of Islamic scholarship²⁸. It is important to note that the introduction of the Hindu-Arabic numerals was perhaps the most significant innovation in the history of Mathematics and was directly responsible for the displacement of the Graeco-Roman system in calculation²⁹. Texts such as the Algorismo vulgaris of John of Hollywood, and the Carmen de algorismo of Alexander de Villa Dei are translations of al-Khwarizimi³⁰. In the case of Mechanical Engineering we are not clear as to whether the conical valves, automatically operated cranks and such devices as sketched in the Kitab al-Hiyal of the Banu Musa would be directly influential on scholars such as Leonardo da Vinci. Hill points out that the text was translated by Gerard of Cremona and became known by the title: On the Measurement of Plane and Spherical figures³¹.

Manuscripts were collected by scholar-amateurs as well as merchants. Diplomatic missions, religious pilgrimages, and the activities of itinerant students were some of the other agencies of transfer. There are several reasons why the process of diffusion cited would lead to technological development in the European case in contrast to the dismal situation in contemporary Third World countries where there is a deepening of technological dependence simultaneous with the attempts at transfer³². We shall examine these in the discussion which follows.

Licences, patents and trademarks are part of the paraphernalia which restrict the contemporary diffusion of techniques and hardware. The use of patents is granted within specified limits. Restrictions abound with respect to farther research, the use of specialists not indicated by the donor and the usage of the technology after the expiration of the contrast³³. It is this situation which led the U.N. General Assembly, in its 7th Special Session, 1975, to demand the implementation of a code governing the transfer of Technology so as to preclude restrictive trade practices³⁴. We note that in the earlier period of focus, however, although nation states attempted to exert some measure of control over the technology developed within their realm such control was relatively limited. There are occasional cases where espionage was resorted to - as in the case of the European monks at Constantinople who smuggled the eggs of the silk worm in a hollow cane - but in general the movement of techniques and material objects seemed to have been less controlled. At any rate, recipients were not constrained by

the paraphernalia of restrictions since the latter would be largely a product of the competitive capitalism of 19th century Europe, an era which would inaugurate the commoditisation of technology in the context of intense secrecy and competition.

In the contemporary period recipient economies are invariably saddled with obsolete technology which in some cases is a deliberate strategy to reduce the competitive power of potential competitors, or to dispense with machinery which are no longer economical³⁵. The situation is worsened by the fact that in the contemporary period the rate of obsolescence of technology is noticeably high and capital and consumer goods become easily outmoded. So invariably, therefore, what is transmitted is outdated by the time it is received³⁶. In the earlier period cited the rate of change was relatively slow. For example, the rotary fan, piston bellows, the wheel barrow and the double harness for horses were transmitted to Europe in the 15th century approximately but were known by the Chinese for at least a thousand years. These devices did not however constitute obsolete technology since they were nowhere superseded³⁷.

Ndebbio has pointed to the high costs to recipient economies of the process of diffusion³⁸. Whereas the process was hardly a commercial transaction in the earlier period of reference, in the contemporary era it is accompanied by systematic and massive outflow of capital which includes the cost of the patents, licenses and trademarks, payments to experts for consultancy services and the overall capital involved in profit remittance by transnational corporations which have become the major agency of transmission, and which by virtue of their oligopolistic behaviour are a major cause of overpricing³⁹. Apart from the fact that they tend to contribute to the absence of an organic relationship between science, technology and production in the Third World economies within which they operate, these monopolies facilitate "the rate of exploitation between nations" and perpetuate "technological neo-colonialism"⁴⁰. In the earlier period, an era of nascent commercial capitalism, such monopolies did not exist and there was therefore less of a stranglehold on the economies in question. The monopolistic nature of the modern technology market, which of course is a feature of the stage of development of global capitalism remains therefore one of the major systemic constraints to any successful technological transfer⁴¹.

In the contemporary period we note that the gains made with respect to the development of skilled manpower and local expertise are invariably lost through the process of "the reverse transfer of

technology"⁴². 67 % of the 119,000 emigrants from Third World countries between 1961 and 1975 were scientists, engineers and technicians⁴³ - the very manpower needed to sustain the attempts at technological development and to provide the necessary technical expertise with respect to design, construction assembly, use and maintenance of technical devices. The point has to be stressed that the last two phases are of utmost significance since as pointed out by Atul Wad technological capability implies maintenance and repair capacity⁴⁴. We contrast this with the early European situation where the more general tendency was for groups of Europeans to travel and study abroad in the East and to return after the extended stay abroad, armed with volumes of manuscripts and samples of foreign technology. A classic case is that of Leonardo of Pisa who travelled to Algeria and other parts of North Africa and who is credited with introducing Hindu-Arabic Arithmetic into Europe, based on the manuscripts of al-Karaji and al-Khwarizimi⁴⁵. In the case of Constantine travel abroad resulted in the assiduous translation of volumes of Medical works of Middle Eastern scholars⁴⁶.

Olufogba has pointed out that there are necessary and sufficient conditions for the successful transfer of technology and that one of these conditions is the "willingness of the receptor nation to establish the body of manpower that has the capabilities to identify, digest and assimilate the techniques of a particular technology"⁴⁷. In the European case, we note the systematic and sustained efforts at assimilation and innovation. Early Modern Europe did not attempt to re-discover the wheel⁴⁸ neither did the Greeks and Romans of Antiquity who absorbed a wide diversity of Egyptian and Middle Eastern techniques and devices such as the axle, the chisel, the mallet, the pulley and the concept of the arch, the vault and the dome, in terms of building technology⁴⁹. Nor are we aware of their rejection of indigenous techniques and principles which were proven useful⁵⁰. The colonial episode was a disastrous one for most Third World economies as far as the development of technology was concerned, for it was characterized by deliberate strategies of 'de-skilling' and 'de-industrialization' in several cases⁵¹. In spite of this, however, there are areas where indigenous techniques and devices are available⁵². There must be a well-researched programme for the selective utilization of such techniques simultaneous with the application of newly acquired ones but there are inbuilt difficulties given the local and systemic constraints.

Conclusion

In this paper we have examined the theoretical underpinnings of the concepts 'technology' and 'transfer of technology'. It is argued that a comparative analysis of the process of transfer in early Modern Europe and contemporary Third World countries reveals that there are certain factors inhibiting the successful transfer in the case of the latter - factors which did not prevail in the earlier historical context.

Notes:

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1. R. Laudan (ed.) The nature of technological knowledge: Are models of Scientific change relevant, Reidel, 1984, p. 3.

2. Laudan, *op.cit.*, pp. 1 - 26.

3. The reference is to Kuhn's community of scientists bound together by a common paradigm during the period of 'normal science'. For 'normal technology' as a concept see Gutting in Laudan, *op.cit.*, pp. 47-66. See also Thomas Kuhn, 'The structure of scientific revolutions' University of Chicago Press, 1973.

4. See Derek De Solla Price, 'Notes towards a philosophy of the Science/Technology interaction', in Laudan, *op.cit.* pp. 105-114 for technology as 'applied science' see Gutting's comments in Gutting *op.cit.*, p. 62.

5. See De Solla Price in Laudan, *op.cit.*

6. Note Popper's refutation of the perspective that science searches for truth. See K. Popper, 'The Logic of the social sciences' in Adorno et. al. The positivist dispute in German Sociology, Heinemann, 1976.

7. This issue has been discussed elsewhere. See G. Thomas- Emeagwali in 'Perspectives on the development of electronics technology: The implications for dependent capitalist economies in Afrique et Développement, CODESRIA, Senegal vol. XI, no. 1, 1986.

8. In the third category are those who declare that technology is not transferable and then proceed to specify conditions for successful transfer.

9. Modernization theorists tend to fall into this category.

10. Technological capacity cannot be commoditised although it is quite true that technology itself has become a commodity and an object of buying and selling, as Ghana points out in 'On the political determinants of Technological Revolution in Nigeria', mimeo. University of Jos, Plateau State, Nigeria, Nov., 1983.
11. For perceptive analyse, on the necessary and sufficient conditions for technology transfer see B. Olufeagba, 'Industrial and Technological development: A rational perspective', mimeo., University of Ilorin, Ilorin, Kwara State, Nigeria, April 1986; E. Lambo 'Technological development in Nigeria: Going beyond rhetorics, "Paper presented as Public Lecture at the 12th Convocation of Kwara State College of Technology, Ilorin, Nigeria, 4 February, 1987.
12. The line of demarcation between the late Medieval period and what we refer to as Early Modern Europe is often indistinct and artificial with respect to the issue at hand. There are several cases where initial contact with a technique or theoretical system dates back to the 9th or 10th century A.D. and would be fully integrated much later. For example, Al-Haythm's work on Optics of the 10th century would influence Kepler in the 17th century. See David Lindberg 'The science of Optics' in D. Lindberg (ed) Science in the Middle Ages, University of Chicago Press, 1978, pp. 338-368.
13. We note other relevant examples such as Al-Ghazali (Algazel), al-Farabi (Alpharabius), Ibn Rushed (Averroes).
14. For a relevant comment on this issue see also Susantha Goonatilake, Aborted Discovery, Zed Press, 1985.
15. We note that Ptolemy was also an outstanding commentator on technical devices.
16. We note also the Europeanization of botanical names and phenomena such as "Halley's" comet.
17. See Goonatilake, *op.cit.*
18. Angela Gilliam, 'On the problem of historicist, categories in theories of human development, in Proceedings of the World Archaeological Congress, volume 3, Southampton, 1986.
19. With the exception of the *abacus* and the *pendulum* which are of Middle Eastern origin the devices mentioned are Chinese in origin. See Needham, Science and Civilisation in China, volume one, C.U.P., 1975, pp.240-241. See also Winter, Eastern Science, John Murray, 1952; Singer, et alia, A history of technology Hall & William, O.U.P. on the abacus see Pederson, 'Astronomy' in D. Lindberg (ed) Science in the Middle Ages, Chicago Press, 1978, p. 309.
20. See Needham *op.cit.* and R. Forbes, Study in Ancient technology, vol. II, Leiden, E.J. Brill, Netherlands, 1965

21. Forbes, *op.cit.*, p. 120.
22. See K. Mendelssohn, Science and Western dominance Thames and Hudson, London, 1976.
23. See Parry, Europe and a wider world 1415-1715 Hutchinson, 1969, p. 20.
24. See Singer, *op.cit.*, p. 762.
25. See Pederson, 'Astronomy' *op.cit.*
26. Pederson, *op.cit.*
27. See D. Lindberg, 'Transmission of Greek and Arabic learning to the West' in Lindberg (ed) *op.cit.* See also Lindberg, Theories of vision from Al-Kindi to Kepler, Chicago Press, 1976.
28. This issue has been discussed briefly elsewhere. See gloria Thomas-Emeagwali 'Reflections on the development of science in the Islamic World - and its diffusion into Nigeria before 1903' in Journal of the Pakistan Historical Society, July/October 1987.
29. See Winter, *op.cit.* See Abdullahi, The Muslim contribution to Mathematics, Humanities Press, 1977.
30. See Mahoney 'Mathematics' in D. Lindberg, *op.cit.*, p. 151.
31. See The Books of Ingenious devices by the Banu Musa bin Shakir, translated and annotated by D. Hill, Reidel, 1979.
32. See for example Atul Wad, Science, technology and industrialization in Africa, Science and Public Policy vol 12.4.85 See also Fidel Castro, Nothing can stop the course of history, being an interview granted to Jeffrey Elliot and Mervyn Dymally, Editora politica, La Habana Cuba 1986, p. 147.
33. See N. Volkov and R. Zimenkov, Technological neo- colonialism, Progress Publisher, Moscow, 1986, p. 58.
34. Volkov, *op.cit.*, p. 80.
35. See B. Ekuerhare, 'On industrial underdevelopment in Nigeria', mimeo. A.B.U., Zaria, June, 1982.
36. This is particularly so for electronics technology for example. See 'relevant comments in G. Thomas-Emeagwali, 'Perspectives on the development of electronics technology' Afrique

et Développement CODESRIA, vol. XI, 1986.

37. See Needham, *op.cit.*

38. See J. Udo Ndebbio, 'Growth process and economic transformation through technological transfer in Africa' in *Science and Public Policy*, vol. 12.4.1985.

39. See Ekuerhere, *op.cit.*, See also Ndebbio *op.cit.*

40. See Gana, *op.cit.*. See also Volkov *op.cit.* for the concept of 'technological neo-colonialism'.

41. See Ndebbio, *op.cit.*

42. See Volkov, *op.cit.*, p. 65.

43. See Volkov, *op.cit.*, p. 62.

44. See Atul Wad *op.cit.* See also J. Asalor, "The reliability of vehicle brake lights in Nigeria; A test of the Nation's technology foundation", in B.J. Olufeagba et alia (eds) *Technological development and Nigerian industries*, vol. one, 1986.

45. See Mohoney, *op.cit.*

46. This is done on the 11th century but the impact of Constantine's work would go beyond that period. We should note that "Constantine the African" as he is sometimes called was North African. His translations from Arabic into Latin would have tremendous influence on the development of Medicine and scholarship in general.

47. See Olufeagba, *op.cit.* See also Lambo *op.cit.*

48. This observation is in direct response to the insightful question raised by Owolabi, namely, whether or not we could afford 'to rediscover the wheel' and still hope to achieve desirable objectives 'within the shortest possible times'. See Owolabi, in 'Relevant strategies and modus operandi for achieving desired goals in technology and industrial development in Nigeria' in Olufeagba et alia *op.cit.*, p. 94.

49. See Winter *op.cit.*, Forbes *op.cit.*, Needham, *op.cit.*

50. An interesting example of the retention of an indigenous European technique along with an imported one is seen in terms of navigational technology - the retention of the square rig simultaneous with the adoption of the Arab lateen sail in the 15th century. See Parry, *op.cit.*, p. 23.

51. See Ekuerhare *op.cit.* See also W. Rodney, How Europe underdeveloped Africa, Bogle

L'Ouverture Pub. 1972.

52. E. Uba Nwuba's research into Nigerian traditional agricultural hand tools is a work in this direction. See E. Uba Nwuba, 'Improved hand tools for Green Revolution', mimeo, Agricultural Mechanization Section, College of Agriculture A.B.U., Zaria, September, 1981. The observation is equally valid for areas such as traditional medicine, textile technology etc. See the communique seminar of Scientific re-examination of traditional Health care Held 2nd May, 1987, University of Ilorin, Ilorin, Nigeria.

RESUME

Nous examinons dans cet article certains des problèmes conceptuels liés au transfert de technologie avant de passer à l'étude proprement dite du processus de transfert technologique, dans ses dimensions historiques.

Nous nous référons en particulier à l'Europe au début des temps modernes et nous soutenons que dans le cas de l'Europe le transfert de technologie a été une réussite dans la mesure où les idées théoriques, les techniques et les instruments nécessaires importés du Moyen Orient, de l'Afrique du Nord, de la Chine et de l'Inde allaient poser de solides jalons pour le développement technologique en Europe.

Nous étudions ensuite le cas des économies actuelles du Tiers Monde par rapport à cette situation et nous démontrons que, contrairement à l'Europe le transfert de technologie dans ces régions a échoué lamentablement pour ce qui est du développement des capacités technologiques. Nous explorons les causes locales de cette situation ainsi que les causes procédant des systèmes tout en définissant les conditions indispensables à un transfert couronné de succès.

TRANSFERT DE TECHNOLOGIE ET PERSPECTIVES INTERNATIONALES DE DEVELOPPEMENT EN AFRIQUE SUB- SAHARIENNE: QUELQUES REFLEXIONS

Maurice Kamto*

Introduction

Phénomène de mode ou nécessité de développement? Le problème du transfert de technologie tient à vrai dire des deux.

Phénomène de mode pour les chercheurs qui semblent ne l'avoir découvert vraiment que dans les années 1970 au moment où se faisaient jour les revendications de toutes sortes. Nécessité de développement assurément, en cette époque où l'accès à la modernité et au bien-être, ou a tout le moins à la croissance économique passe inéluctablement par la maîtrise de procédés de fabrication toujours plus complexes, fruit du savoir humain capitalisé et en progrès constant.

L'intérêt de la question explique l'importance des travaux qui lui ont été consacrés. On ne saurait l'aborder dans une perspective monographique sans courir le risque d'inutiles répétitions. C'est pourquoi cette réflexion se veut interrogation et investigation. Ni véritable bilan, ni simple synthèse historique, elle se veut une tentative de recherche du sens.

Il s'explique alors que l'on se convainc à faire l'économie de la présentation des différentes définitions de termes et notions trop connus comme ceux de technique, de technologie¹, de transfert², de transfert de technologie³, de développement, etc. On dira, en s'inspirant de la définition proposée dans le Projet de Code

international de conduite pour le transfert de technologie⁴ que le transfert de technologie est une exportation à titre onéreux des connaissances systématiques nécessaires à la fabrication d'un produit, à l'application d'un procédé ou à la prestation d'un service, d'un centre de producteurs/fournisseurs de technologie vers une zone de reproducteurs/consommateurs de ce produit.

Cette définition exclut du transfert de technologie les transactions comportant la simple vente ou le simple louage de biens. A la différence de la plupart des définitions, elle intègre l'idée d'achat. Dans cette perspective, il semble plus exact de parler d'acquisition de technologie plutôt que de transfert, car celui-ci laisse planer une vague idée de gratuité.

La technologie présente les caractéristiques d'un bien économique en tant qu'il est le fruit d'un investissement (dans la formation et dans la Recherche-Développement (R-D) et le résultat d'un processus de production du savoir technique (création de systèmes ou de procédés de fabrication de produits nouveaux). Mais il s'agit d'un bien de nature spéciale qui entre en jeu dans les relations internationales, et qui apparaît d'ailleurs de plus en plus comme un facteur essentiel de la puissance des Etats.

Si l'acquisition de la technologie moderne coûte extrêmement cher, il se trouve par ailleurs qu'il ne suffit pas toujours de disposer de moyens financiers nécessaires pour accéder à toutes les technologies. Le marché technologique est fortement soumis à l'influence des stratégies économiques et des stratégies de politique étrangère. Autrement dit, les créateurs de technologie ne consentent à céder que celle dont l'acquisition par le consommateur ne saurait compromettre leur suprématie ou leur puissance. Si cette affirmation se trouve vérifiée même pour les pays du centre de production de la technologie (triangle Europe- Amérique du Nord-Japon), elle l'est absolument dans la perspective Nord-Sud: le marché technologique mettant en commerce le "centre" et la "périphérie" est un marché de produits virtuellement obsolètes.

Et lors même que celles des firmes multinationales qui échappent au contrôle de leurs pays d'origine consentiraient, à la faveur d'une perspective de profit substantiel, à transférer certaines technologies non encore périmées, se pose le problème de leur maîtrise par les acquéreurs. Les pays de l'Afrique du Nord qui ont une avance technologique significative sur ceux de l'Afrique Sub-saharienne en raison d'une expérience plus ancienne dans l'acquisition des technologies

développées⁵ offrent à cet égard une parfaite illustration.

La problématique du transfert de technologie pour le développement de l'Afrique Sub-saharienne s'annonce alors plus complexe qu'elle n'apparaissait de prime abord. On peut en résumer les éléments: le transfert de technologie est une nécessité pour le développement du continent. Or le bien technologique est très onéreux et l'Afrique Sub-saharienne très pauvre. De plus, la technologie est un élément de la puissance de l'Etat moderne. Dès lors, par un transfert sélectif, les fournisseurs vont accroître la dépendance technologique d'une Afrique essentiellement consommatrice, et asseoir ainsi une nouvelle division internationale du travail fondée sur l'opposition entre producteurs et consommateurs de technologie.

Telle étant la situation, l'Afrique Sub-saharienne peut-elle alors espérer tirer parti d'un transfert international de technologie pour accomplir son développement?

Si la question est simple, la réponse, elle, ne l'est pas. Car non seulement le transfert de technologie apparaît en l'occurrence comme une exigence de portée ambivalente (I) présentant un caractère aliénant et offrant des perspectives de libération⁶, mais l'on constate que son flux est contrarié par l'importance de son enjeu (II). Cependant, l'expérience de quelques pays qui ont connu un essor industriel et technologique récent permet de croire qu'il reste à l'Afrique Sub-saharienne quelques stratégies du possible (III).

Une Existence de Portée Ambivalente

Le transfert de technologie produit des effets différents suivant qu'il s'opère entre pays développés entre eux, ou au contraire entre pays développés et pays en voie de développement. Dans le premier cas, la communauté des valeurs partagées par ces pays annule le choc technologique, de même que la symétrie de leurs niveaux de développement transforme le transfert en échange technologique et tempère par là même l'effet de dépendance.

Le transfert joue différemment dans le sens Nord-Sud, et plus encore en direction des pays d'Afrique Sub-saharienne qui sont assurément parmi les plus arriérés sur le plan de la production et de la maîtrise des technologies modernes. Si le savoir-faire importé demeure ici un facteur déterminant du développement par les changements qualitatifs que les technologies acquises introduisent dans le mode et les techniques de production et dans la qualité de la vie des

populations, il se révèle aussi comme un facteur de dépendance en raison de l'extranéité des centres de créations technologiques. Nécessité (A) source de dépendance (B), ainsi se résume cette ambivalence.

A./ Une Nécessité

D'emblée, on est frappé par quelques données statistiques⁷: l'Afrique dont la population est estimée aujourd'hui à 400 millions d'habitants n'intervient que pour 2,7% dans le PNB mondial. En 1980, le PNB par habitant était de 282 dollars E.U. pour les pays africains sub-sahariens, contre 633 dollars pour les pays de l'Asie du Sud (à l'exclusion des pays à économie planifiée). Il était de 1398 dollars pour les pays latino-américains (à l'exclusion de Cuba), de 1847 dollars pour les pays de l'Afrique du Nord et du Moyen-Orient (à l'exclusion de l'Afghanistan - moins, d'Israël et de la Turquie - plus). Parmi les 33 pays du monde dits moins avancés (PMA) dont le revenu par habitant est inférieur ou égal à 300 dollars, 21 sont situés en Afrique Sub-saharienne. Le taux de croissance du PNB/hab. dans les pays à faible revenu de cette région est tombé de 1,7% dans les années 1960 à 0,2% entre 1970 et 1980, alors que pour les pays à faible revenu de l'Asie, il est passé de 1,8% à 2% au cours de la même période. Parallèlement, le taux de croissance du PNB/hab. dans les pays sub-sahariens à revenu moyen était de 2,3% au cours des années 1960-70, il est passé à 1,6% pendant les années 1970-80. Les chiffres enregistrés au cours de ces périodes pour les pays d'Amérique latine et des Caraïbes étaient respectivement de 2,9% et 3,2%, contre 4,9% et 5,7% pour les pays d'Asie et du Pacifique.

Les faits sont là: En ces années 1980, l'Afrique Sub-saharienne est incontestablement la région la plus pauvre du monde! La masse des capitaux injectés sous forme d'aide au développement dans ces pays est pourtant appréciable. C'est qu'en plus du gaspillage des ressources si souvent dénoncé, ces pays sont à la traîne de la recherche scientifique⁸ et de la révolution technologique.

Or l'innovation technologique ouvre des perspectives de développement inespérées pour les pays sous-développés, et notamment pour ceux de l'Afrique Sub-saharienne. Elle leur offre la possibilité d'accomplir de véritables "bonds en avant" en faisant l'économie des réinventions.

Bien sûr l'importation des technologies généralement conçues pour d'autres milieux comporte ses risques: désorganisation des structures sociales dans lesquelles ces technologies se diffusent, aliénation

culturelle des populations auxquelles elles s'adressent. Mais peut-il y avoir développement sans coûts du développement? D'où le problème du choix des technologies et de leur adaptation. Toutefois, contrairement à certaines thèses culturalistes à la mode⁹, ce ne sont pas toutes les technologies importées qui sont inadaptées ou aliénantes, c'est bien souvent leur mauvaise utilisation qui expose les Africains à l'aliénation et à la "dépersonnalisation". Toute technologie, qu'elle soit d'importation ou de production nationale peut présenter des risques pour ses utilisateurs ou pour l'environnement. C'est aux pays acquéreurs de technologie d'apprécier ses effets indésirables potentiels et d'opérer les choix conséquents. Si la plupart des pays producteurs de technologie¹⁰ ont mis en place des mécanismes de contrôle et de sélection, cela semble plus impérieux encore pour les pays sous-développés, et il n'est pas sans intérêt de signaler que certains pays d'Afrique Sub-saharienne ont déjà pris des mesures en ce sens¹¹.

Endogénéisées et utilisées à bon escient, les technologies acquises constitueraient assurément un facteur dynamisant du développement par l'amélioration du volume et de la qualité de la production, ainsi que par l'allègement de la pénibilité du travail en particulier en milieu rural. Car la technologie permet de valoriser certaines ressources inutilisées - par exemple la mise en valeur des sols arides par l'irrigation et la fertilisation - et d'en tirer le meilleur parti¹².

Loin d'être un simple facteur d'appoint du développement, la maîtrise technologique en est devenue la condition même. Le Programme d'action de Vienne¹³ élaboré par la CNUCED réitérait l'appel de l'Organisation mondiale pour un rapide développement des capacités technologiques des pays en voie de développement. Cet appel est résumé dans la Stratégie Internationale pour la Troisième Décennie des Nations-Unies pour le Développement en ces termes:

"Access to and mastery of modern scientific and technological knowledge are essential for the economic and social progress of developing countries. Accordingly, high priority must be given to increasing the developing countries scientific and technological capacities... Action will be taken by international scientific and technological relations affecting the transfer and development of technology..."¹⁴.

Il apparaît en effet, depuis la Révolution industrielle en Europe, que la création et l'innovation technologiques ont progressivement pris

le pas sur le facteur travail dans l'essor de l'agriculture et de l'industrie. L'abondance et la variété de ces innovations¹⁵ "apporteront un gain de productivité sans précédent, partant, une élévation substantielle du niveau de vie par tête"¹⁶ dans les pays européens touchés par la Révolution.

Lors même qu'elle n'aurait pas à refaire le chemin de cette Révolution industrielle, l'Afrique Sub-saharienne, pour ne parler que d'elle, ne pourra accomplir son émancipation économique autrement que par l'exploitation du potentiel technologique mondial.

En dehors de l'absence d'une politique agricole et industrielle globale, du manque de courage politique et d'intelligence de l'économie internationale, au-delà même d'une mauvaise allocation des ressources disponibles due à une gestion financière trop souvent déficiente, c'est l'absence de maîtrise technologique qui explique pour une bonne partie le retard que les pays d'Afrique Sub-saharienne accusent dans les secteurs agricoles et industriels. La structure dualiste des économies de ces pays le montre à souhait:

Dans le secteur agricole, l'essentiel des producteurs restent encore de petits paysans vivant en milieu rural, pratiquant une agriculture traditionnelle avec des techniques et des instruments qui n'ont guère évolués depuis deux siècles. Une houe simple ou une daba, une hache, une machette etc..., tels sont encore pour l'essentiel, les moyens de production des paysans africains qui ne peuvent - reconnaissons-le, avec des outils aussi rudimentaires, supporter un accroissement démographique continu pendant des siècles¹⁷ en dépit de leurs efforts à la tâche. Même les technologies les plus simples utilisées en Europe entre le XVIIIe et XIXe siècle ne sont pas encore introduites dans ces pays¹⁸. La culture attelée reste rare, et a fortiori la culture motorisée.

Pourtant, on observe les formidables progrès accomplis dans la production des cultures de rente telles que le cacao, le café, le coton, l'hévéa, notamment en Côte d'Ivoire, au Ghana, au Cameroun et au Nigéria, dans certaines cultures industrielles telles que le palmier à huile, au Nigéria, au Ghana, au Cameroun et en Côte d'Ivoire, la canne à sucre, au Cameroun, en Côte d'Ivoire, au Togo, au Sénégal, etc., le thé et le poivre au Burundi et au Cameroun, et certaines cultures vivrières telles que le maïs au Zimbabwe, et le riz dans la plupart des pays concernés. Ce mode d'introduction de la technologie dans l'agriculture africaine est d'une efficacité trop limitée, dans la mesure où elle se confine à quelques complexes agro-industriels de création étatique, et ne touche que trop rarement le monde paysan. La fonction

catalytique de la technologie est donc nulle parce qu'elle vient en surimpression sur un monde qui continue de vivre son archaïsme technologique.

Parallèlement, par rapport à la production industrielle, l'Afrique apparaît comme une région sinistrée. La pratique de la globalisation des statistiques de l'ensemble des pays du Tiers Monde en cours dans les institutions internationales peut induire en erreur sur la situation réelle des pays de cette région. Prises globalement, en effet, ces statistiques affichent un accroissement de la part des pays du Tiers Monde dans la production industrielle et notamment dans la production et l'exploitation des biens d'équipement. A la vérité, l'essentiel de ces exportations est concentré par les pays en développement technologiquement avancés, parmi lesquels des pays et territoires comme l'Argentine, le Brésil, Hong-Kong, l'Inde, le Mexique, la République de Corée et Singapour, qui en ont réalisé les 67%¹⁹. Les statistiques établies en 1981 montraient qu'à cette date aucun pays d'Afrique, et a fortiori d'Afrique Sub-saharienne n'était exportateur de biens d'équipement²⁰ "définis comme excluant les biens de consommation durables et les pièces correspondantes"²¹. Seuls quelques pays d'Afrique du Nord (Algérie, Egypte, Maroc, Tunisie,) et quelques rares pays d'Afrique sub-saharienne tels que le Zimbabwe, le Nigéria et le Kenya étaient producteurs de tels biens²². On sait pourtant combien les biens d'équipement ont joué un rôle central dans l'industrialisation des pays développés, non seulement dans les plus anciens d'entre eux, mais aussi dans deux pays importants dont l'industrialisation est plus récente: le Japon et l'URSS²³. Dans ces deux pays, le secteur des biens d'équipement a été à long terme un facteur déterminant du processus d'industrialisation, stimulant la formation du capital et améliorant le rendement des investissements²⁴. La croissance de ce secteur en volume et en complexité a aussi contribué de manière décisive à l'apparition et à la diffusion du changement dans l'ensemble de l'économie²⁵.

Cette faiblesse technologique des pays d'Afrique Sub-saharienne traduit à la vérité un paradoxe: dans bien des cas le transfert de technologie a eu lieu sans produire toujours les résultats escomptés. Loin d'être une situation de carence technologique, il s'agit plutôt du problème trop connu des technologies inadaptées (ou non adaptées) et des technologies non maîtrisées. Et dans tous les cas, les pays de l'Afrique Sub-saharienne étant restés en position de consommateurs improductifs de technologie, ont désormais assorti leur dépendance politico-économique d'une dimension de dépendance technologique.

B./ Un Facteur de dépendance

L'appropriation et la maîtrise de la technologie introduisent une asymétrie entre les compagnies fournisseurs et les pays africains importateurs: d'un côté, en effet, se trouvent les opérateurs qui maîtrisent totalement l'ensemble des techniques, et, de l'autre, des gouvernements ou des compagnies nationales qui cherchent à acquérir progressivement les connaissances de base qui leur permettront de participer, de contrôler et d'orienter l'ensemble des opérations de décision. Il en est ainsi par exemple de l'industrie pétrolière au Cameroun, en Côte d'Ivoire et en Guinée-Bissau²⁶. Le facteur technologique réintroduit ainsi le débat des années 1970 sur la théorie de la dépendance fondée sur l'opposition "Centre" - "périphérie". Les nouveaux mécanismes de la "domination/dépendance"²⁷ résultant d'une "industrialisation extravertie à partir des techniques existantes dans les pays développés"²⁸, reposent sur une nouvelle division internationale du travail fondée, non plus sur la distinction fournisseurs de produits "primaires" / fournisseurs de produits "secondaires" ou manufacturés, mais sur l'opposition "créateurs" / "reproducteurs"²⁹ ou producteurs / consommateurs. Il fallait par le biais de la maîtrise technologique reconquérir une suprématie économique, et partant, une hégémonie politique, que le sursaut du prix des matières premières consécutif à la "crise pétrolière" avait tendu à affaiblir. Aussi, certains ressortissants de pays développés pouvaient-ils suggérer qu'entre "l'Europe et le monde africain" puisse s'instaurer une "association de ceux qui pour l'instant ont la plus grande partie du savoir faire, et ceux qui ont les matières premières..."³⁰. Lors même qu'ils s'essaient à la production industrielle moderne, les pays d'Afrique Sub-saharienne continuent encore à être "spécialisés" dans la production d'articles primaires. Dans certains cas, le transfert de certaines technologies a paradoxalement entravé la croissance des économies de ces pays, car leur acquisition à des prix souvent excessifs et la participation des fournisseurs au capital des usines importées ont entraîné un processus interrompu de décapitalisation dû à la sortie de devises sous forme d'achat des équipements, de bénéfices obtenus par le capital étranger, de paiements à titre d'intérêts, de brevets, de redevances et d'autres frais relatifs à l'implantation des usines, en sorte que la sortie des devises relatives à l'investissement technologique était parfois supérieure au gain que l'on pouvait en attendre³¹. Il ne pouvait en être différemment dès lors que le modèle de croissance de ces pays est depuis toujours extraverti. Or, indique-t-on avec raison: "s'imposer un modèle de croissance emprunté c'est s'aligner dans une compétition dont les vainqueurs sont désignés d'avance"³².

Dans tous les cas, la faiblesse des capacités technologiques nationales des pays africains qui se traduit par une très faible production de biens d'équipements, de même que l'absence de maîtrise des technologies importées renforcent la dépendance technologique de ces pays, conséquence elle-même de leur dépendance financière. En effet, l'extrême dépendance des pays d'Afrique Sub-saharienne vis-à-vis de l'extérieur pour le financement des projets d'investissements industriels ou agro-industriels, ajoutée à la complexité des technologies en cause, au manque de capacités technologiques et industrielles au niveau local et à la faveur dont jouit le matériel étranger auprès des responsables africains, ont enfoncés ces pays dans le guépier des "clefs en main"³³. On connaît les conséquences: contrats trop coûteux sans garantie de fonctionnement, faibles vecteurs de technologie dans la mesure où très souvent les fournisseurs assurent jusqu'à la réalisation des "produits en main" en n'employant que très peu de personnel technique local qualifié, coût social parfois supérieur aux retombées économiques et technologiques. L'Algérie en a fait l'expérience, en particulier dans la première phase de son industrialisation³⁴. Certains pays d'Afrique Sub-saharienne ont connu eux aussi les mêmes tribulations. C'est le cas du Cameroun avec l'échec du gigantesque projet d'usine de fabrication de la pâte à papier (CELLUCAM) ayant nécessité un investissement de plus de 100 milliards de F.CFA, et d'autres réalisations industrielles telles que la société de fabrication des engrais (SOCAME), les Céramiques industrielles du Cameroun (CERICAM) ou encore la Société camerounaise des Tanneries et Peauceries (SCTP) pour ne citer que celles qui ont fermé.

Le Kenya a connu également de tels déboires technologiques avec l'abandon de l'usine MADHVANI conçue pour la fabrication de l'alcool énergétique, la levure de boulanger, l'acide citrique et le vinaigre, et dont les travaux de construction furent arrêtés à la fin de 1982 sans que l'usine ait fabriqué un seul produit, alors que le gouvernement Kenyan y avait investi près de 200 millions de dollars E. U.³⁵.

L'étude comparative de l'implantation d'usines de fabrication de combustibles et carburants à l'alcool au Kenya et au Zimbabwe³⁶ montre par ailleurs à quel point un bon choix technologique articulé sur une industrie locale de biens d'équipement peut avoir un impact autrement positif sur l'industrialisation des pays africains:

L'usine MEHTA, au Kenya, a une capacité nominale de 60.000 l/j. (18 millions l/an) et fonctionne selon le principe de la fermentation continue. En outre, elle peut produire annuellement 1.200t. de levure de boulanger et 500t. de levures fourragères. Son rendement global

calculé d'après la teneur de la mélasse en sucre fermentescible est de 93%, soit 2831/t. de mélasse. L'étude de faisabilité du projet est l'oeuvre de la société autrichienne Volgelbusch, qui a également fourni la technologie utilisée et s'est chargée du financement extérieur. Et "comme il n'existait pas au Kenya de secteur de biens d'équipement développé, la construction de l'usine a fait l'objet d'un contrat clefs en main, la majeure partie du matériel étant fabriquée en Autriche"³⁷. En comparaison d'autres usines dans le monde, l'investissement initial (12.650.000 dollars E.U.) par unité de produit à l'usine METHA (0,7 dollar/l) est très élevé par rapport au coût d'investissement correspondant au Brésil (0,39 à 0,66 dollar) et au Zimbabwe (0,15 dollar/l). Cela tient, semble-t-il, au choix d'une technologie complexe pour la fabrication de l'alcool et l'évacuation des effluents. De plus, si le coût de la matière première est extrêmement bas (6,5 cents/l) par rapport au reste du monde et ne représente que 12 à 13% du prix de revient final (54 c/l), les coûts de transformation (25 c/l) sont élevés eux aussi, par suite d'une grosse infrastructure de gestion et des besoins considérables en vapeur et produits chimiques. En définitive, le coût de production effectif est donc beaucoup plus élevé que le coût départ raffinerie du supercarburant (38,8 c/l) ou de l'essence ordinaire (36,1 c/l) à Mombassa. Et c'est par le jeu de la fiscalité que l'Etat arrive à ramener le prix final du carburant (mélange d'alcool énergétique et de l'essence ordinaire) à 68,9 c/l c'est-à-dire au même prix que le supercarburant. L'Etat applique en effet un impôt de 3,5 c/l seulement sur l'alcool contre 20,2 c/l pour le supercarburant et 18,4 c/l pour l'essence ordinaire.

L'usine TRIANGLE, au Zimbabwe, a une capacité nominale de 120.000 l/j. (42 millions de litres/an) et exploite le procédé de fermentation en discontinu d'un mélange de jus de canne et de mélasse. Son rendement était d'environ 520l. d'alcool par tonne de produits fermentescibles en 1984, soit un rendement d'environ 85,2%. Les résidus de distillation (15 litres pour 1 litre d'alcool) sont soit mélangés aux eaux d'irrigation, soit concentrés pour obtenir un sous-produit de distillation de la mélasse qui sert à fabriquer sur place des aliments de bétail. La technologie choisie vient de la R.F.A. et est apportée par la société Gebr. Herman / Buckau Walther. Ce choix répondait au souci d'économiser des devises (*les dépenses en devises ne représentaient que 45% du coût total du projet, ce qui est exceptionnel en Afrique Sub-saharienne*) et de tirer parti de la solide industrie de biens d'équipement qui existait alors au Zimbabwe. Aussi a-t-on choisi une technique simple afin d'en réduire le coût le plus possible et de pouvoir l'exploiter facilement. L'investissement initial total a été de 3,9 millions de \$ Zim. (environ 6 millions de dollars E.U.) soit

moins que le coût prévu de 3.980.000 \$ Zim., ce qui est tout aussi exceptionnel. Sur ce total, *une somme de 1,8 millions \$ Zim. seulement* a été consacrée à l'achat du matériel étranger! Calculé sur la base du prix du sucre inverti, le coût de la matière première est assez élevé, car il entre pour environ 80% dans le prix sortie usine qui reste néanmoins de 45,4 c/l pour l'usine Kényenne. Le coût de transformation (de 7,7 à 8,9 c/l, y compris une marge bénéficiaire de 5,2 c/l) est *extrêmement bas* si l'on considère qu'à l'échelle mondiale, il oscille généralement entre 12,8 et 19,4 c/l. Cela tient à de faibles dépenses d'énergie grâce à l'utilisation de la vapeur provenant de la fabrique de sucre. La différence d'imposition entre l'alcool énergétique et l'essence ordinaire est très faible au Zimbabwe: 3,3 c/l pour le premier contre 4,8 c/l pour le second. Tous frais comptés, le prix de l'alcool rendu à Harare est de 48,4 c/l contre 43,5 c/l pour l'essence ordinaire³⁸ en tout cas largement inférieur au prix du litre d'alcool fabriqué au Kenya (68,9 c/l); la différence de prix du même produit entre les deux pays étant de 20,5 cents au litre!

De manière générale, pour la plupart des activités nécessitant une technologie complexe comme l'exploration et l'exploitation du pétrole³⁹ les contraintes de coût et les contraintes techniques font qu'elles échappent totalement aux pays sub-sahariens. Le transfert de technologie est nul dans ce cas, car rares sont les Africains qui sont impliqués dans les opérations techniques à des niveaux élevés. Au surplus, l'effet industrialisant de l'industrie d'extraction pétrolière, très élevé dans les pays industrialisés et technologiquement avancés, est également nul du fait de l'inexistence en aval d'usines de fabrication des sous-produits et autres dérivés du pétrole⁴⁰. On en est venu alors à

"s'interroger sur la réalité du transfert de technologie, qui se présente parfois comme un marché de dupes en matière de maîtrise du développement national et dont les impératifs produisent des effets directs sur la structure sociale des pays consommateurs, favorisant ou confortant l'émergence d'une classe dirigeante et l'instituant, volens nolens, comme un relais de la stratégie des firmes transnationales, ou bien installant carrément, dans les pays importateurs, de véritables "enclaves" économiques, simples filiales des sociétés-mères ou sociétés mixtes s'incorporant le capital privé national"⁴¹

Ce constat judicieux omet toutefois de souligner la responsabilité de la "classe dirigeante" des pays importateurs par rapport aux effets pervers du transfert, car toute analyse bien faite, il apparaît que trop souvent, ce n'est pas le fait même d'importer des technologies qui est en

cause, mais bien plutôt le mauvais choix technologique, l'absence de contrôle dans l'implantation et l'utilisation des technologies acquises, l'absence d'une vision globale des problèmes d'industrialisation du pays, et par-dessus tout, la propension très marquée des décideurs de ces pays à se préoccuper prioritairement de ce qu'ils gagnent à signer un contrat de fourniture d'une usine "clefs en main" plutôt que l'impact d'une telle acquisition sur l'économie du pays ou encore son enjeu social. La corruption et l'incurie sont des fléaux bien connus des administrations africaines, et la plupart des échecs de transfert de technologie en sont simplement les conséquences.

Pour le reste, si l'on veut une amélioration du niveau de développement des pays de l'Afrique intertropicale, et un accroissement sensible de leur part dans la production industrielle mondiale au cours des décennies à venir, comme le souhaitait la deuxième conférence générale de l'ONUDI tenue en Mars 1975 à Lima⁴², "les besoins de transferts des techniques seront de toute évidence beaucoup plus grand que par le passé"⁴³. Mais tel Prométhée enchaîné, le transfert de technologie est entravé par de nombreux liens. C'est que l'enjeu technologique se situe bien au-delà du coût de ce produit, tout entier issu du savoir humain.

Un Flux Contrarié par l'Importance de l'Enjeu

"Un Japon ça suffit!"⁴⁴. Cette formule lapidaire que M. Michel Henry prête au producteurs de technologie situe avec force l'enjeu technologique dans les relations internationales contemporaines. La technologie crée peut-être un nouvel instrument d'aliénation, par l'annulation de l'hétérogénéité des civilisations, la perte de l'identité qu'elle entraîne et le procès d'uniformisation culturelle⁴⁵ ; elle est très certainement un nouveau facteur d'influence dans les relations internationales.

En effet, plus qu'aucun autre bien, la technologie apparaît désormais comme une donnée fondamentale de la puissance des nations, et un des facteurs essentiels de la richesse des firmes qui opèrent à travers le monde. Pierre angulaire de la stratégie économique des sociétés transnationales donc (A), le transfert de technologie apparaît alors aussi comme une donnée nouvelle d'importance croissante dans les relations interétatiques (B).

A./ Une pièce maîtresse de la stratégie économique des firmes transnationales

Le premier obstacle au transfert de la technologie est le prix prohibitif⁴⁶ pratiqué par les vendeurs qui se trouvent très souvent en situation de monopole ou constitués en cartels de fournisseurs⁴⁷. C'est l'aspect le plus couramment dénoncé par les pays africains. Mais la politique des prix semble bien secondaire dans les techniques d'entrave au transfert mises en oeuvre par les firmes multinationales et dont les principales ont été soulignées par des études de la CNUCED⁴⁸. Ces entraves consistent en de:

"nombreuses limitations imposées aux activités et aux droits de propriété des entreprises nationales par les entreprises étrangères: les clauses explicites figurant dans les accords contractuels et les pratiques implicites des sociétés transnationales qui sont responsables des coûts directs et indirects élevés du transfert des techniques. Les diverses limitations et pratiques abusives qui sont soit réputées illicites, soit combattues d'autres façons dans les pays fournisseurs de techniques mais qui, dans les pays en voie de développement, sont d'usage courant; la réglementation de la propriété industrielle et les politiques administratives qui entravent l'utilisation efficace des techniques acquises; toute une série de pratiques implicites et explicites suivies par les sociétés transnationales et autres pratiques qui tendent à limiter les possibilités des pays en voie de développement d'accéder à la technologie voulue pour le produit voulu dans les conditions voulues et au moment voulu. Toutes ces difficultés entravent le développement du potentiel scientifique et technique national et prolongent indéfiniment la dépendance technique des pays en voie de développement"⁴⁹.

Si les entreprises fournissant les techniques donnaient aux acquéreurs un certain nombre de garanties concernant les techniques fournies, les pays en voie de développement acquéreurs de technologie seraient mieux soutenus dans leurs efforts d'industrialisation. Mais le dessein, avoué ou non, des firmes multinationales n'est pas d'aider les pays en voie de développement: c'est de gagner de l'argent, le plus d'argent possible et le plus rapidement possible. L'exemple du Groupe allemand Klockner c/ la République du Cameroun est édifiant à cet égard. Après avoir vendu, "clef en main", à la Société Nationale d'Investissement du Cameroun (SNI), représentant les intérêts de l'Etat camerounais, une usine de fabrication d'engrais - aux coûts excessifs et aux caractéristiques techniques défectueuses - pour le compte de la Société Camerounaise des Engrais (SOCAME) implantée à Douala, le Groupe allemand qui s'était comporté dans cette affaire à la manière d'un vulgaire "aventurier spéculateur et profiteur"⁵⁰, reprochait injustement au gouvernement camerounais son manque de volonté politique ainsi que de n'avoir pas pris les dispositions qui s'imposaient pour la

réussite du projet, d'avoir envisagé le projet "essentiellement sous l'angle de l'indépendance économique nationale" et non "sous le seul aspect de sa rentabilité"⁵¹; il arguait enfin que les ministres camerounais signataires du contrat de transfert étaient suffisamment avisés de par leur formation pour n'avoir pas à se laisser induire en erreur!⁵²

La conscience que la diffusion des techniques de pointe introduirait les contraintes de la concurrence et affaiblirait de ce fait leur position sur le marché mondial, oriente la politique des firmes multinationales en matière de transfert de technologie⁵³. Les grandes firmes demeurent les régulatrices des normes technologiques et déterminent les conditions de transfert. "Il n'y aura pas d'autre Japon" disent-elles. "Elles y veillent, et particulièrement en contrôlant de l'extérieur les politiques de formation professionnelle qui visent à adapter localement les hommes au bon fonctionnement des machines et des systèmes conçus ailleurs pour produire des biens dont les normes sont fixées ailleurs et qui, pour rentabiliser les investissements réalisés, doivent être vendus le plus souvent à des consommateurs situés ailleurs. De même pratiquent-elles la rétention des informations les plus avancées afin de conserver la maîtrise de l'innovation"⁵⁴.

C'est par souci de briser cette loi des firmes monopolistes et de restructurer les relations internationales dans le domaine du transfert des techniques qu'à été élaboré un Projet de code international de conduite pour le transfert de technologie. Mais outre que ce projet n'est toujours pas adopté, il s'agit essentiellement d'un texte de valeur morale dans son esprit, et dont les principes indiquent le souhaitable davantage qu'ils ne constituent un corpus de règles obligatoires⁵⁵. Au demeurant, les firmes transnationales disposent de nombreuses techniques pour contourner même les législations plus contraignantes. Bien souvent en effet, la non-divulgaration du savoir-faire et d'autres renseignements nécessaires à l'application de la technologie, - pourtant interdite par la plupart des lois sur les brevets⁵⁶ - constitue un monopole de fait encore plus puissant que la protection d'un brevet. Un spécialiste des brevets d'un pays industriel commente:

"Un breveté peut brouiller les cartes par l'abondance même des renseignements qu'il fournit. Certes, il doit décrire la meilleure méthode, mais il n'est pas obligé de l'identifier. Par exemple, en chimie, il peut à la fois renforcer sa position juridique et sa position commerciale en décrivant une masse d'expériences à l'appui de sa demande de brevet tout en laissant au lecteur le soin de découvrir lequel des procédés est le meilleur du point de vue commercial"⁵⁷.

Le contrôle de la technologie par les producteurs peut aussi s'exercer par le biais de la protection qui continue d'être accordée à des marques de fabrique ou de commerce liées à l'emploi d'une technologie particulière. Ainsi, lors même qu'une technologie donnée semble tomber dans le domaine public après la déchéance ou la révocation du droit de propriété industrielle, la vie économique effective d'une invention ne coïncide pas nécessairement avec sa vie légale, et, "dans la pratique, la technologie n'est pas à la portée des usagers potentiels à cause du contrôle de fait exercé par le détenteur du brevet".

On comprend que dans ces conditions, les perspectives de développement des pays de l'Afrique Sub-saharienne dont le degré de dépendance technologique est extrêmement élevé soient des plus incertaines. D'autant plus que les réticences des firmes à transférer la technologie ou leur roublardise dans le processus de transfert s'accompagne dans certains cas du refus explicite ou inavoué des pays développés à transférer certaines technologies jugées sensibles. Car de simple facteur de production, la technologie est devenue une donnée importante des relations interétatiques.

B./ Une donnée nouvelle des relations inter étatiques

Il y a un peu plus d'une génération seulement, la science, encore confinée dans les laboratoires, n'avait pas encore fait irruption dans l'univers politique, en dépit même de son intervention décisive dans la deuxième Guerre Mondiale⁵⁸. Or, désormais, la science et la technologie influencent considérablement la politique étrangère⁵⁹. On observe ainsi que les puissances technologiques adoptent des mesures tendant à la limitation ou à l'interdiction de l'accès à la technologie à d'autres pays. Ces mesures peuvent s'appliquer entre pays développés entre eux, en particulier lorsque se trouve en cause une technologie de pointe entrant comme une composante de la puissance du pays détenteur (il en est ainsi des technologies avancées ayant des applications militaires: par exemple, les Etats-Unis interdisent, même à leurs alliés européens, la vente de certains types d'ordinateurs à l'URSS et à la Chine; la guerre de l'ombre c'est aussi et avant tout la guerre technologique), mais aussi entre ces pays et les pays en voie de développement (il en est ainsi notamment de certaines technologies, même non extrêmement perfectionnées, dont le transfert pourrait permettre le développement d'une industrie concurrente dans les pays du Tiers Monde et entraîner la désindustrialisation des pays fournisseurs ainsi que l'accroissement conséquent des chômeurs).

Les égoïsmes technologiques sont ainsi à la mesure des nationalismes scientifiques, de la situation socio-économique des pays fournisseurs ainsi que des objectifs de politique étrangère. Ce ne sont pas seulement les firmes transnationales qui disent: "Un Japon ça suffit!", ce sont aussi les Etats. Et le facteur technologique joue un rôle d'unification des "créateurs", par-delà les différences de systèmes économiques et les oppositions idéologiques. Car tout est question de performance. Pour le reste, sur la question de transfert de technologie, l'attitude des pays de l'Est ne diffère pas fondamentalement de celle des pays occidentaux, pas plus d'ailleurs que de celle des "nouveaux pays-industriels", relais des centres mondiaux de technologies qui aspirent à entrer dans le club restreint des puissances technologiques.

En dépit du tiers mondisme militant dont fait preuve l'URSS, sa politique de transfert de technologie est à cet égard fort proche de celle des Etats-Unis, parfois même plus restrictive. Il s'agit d'un transfert discriminatoire - en rapport avec le degré de convergence idéologique ou d'alliance militaire avec le pays d'accueil, et assorti d'interdiction de transmission à un tiers - et sélectif, en tant qu'il ne porte que sur certains types de technologies⁶⁰. De plus, tout transfert de technologie est soumis à l'approbation du Comité d'Etat chargé des relations économiques extérieures, relevant du Conseil des Ministres de l'URSS et du Ministère du commerce extérieur. C'est encore ce Comité qui organise la formation en URSS des spécialistes originaires des pays en voie de développement⁶¹.

Que dire? Que l'Afrique Sub-saharienne ne saurait durablement bâtir ses espoirs de développement sur les aléas d'un transfert de technologie dont elle ne maîtrise ni la procédure, ni les coûts. Si l'importance massive des techniques, pour autant qu'elle soit toujours possible, reste pour ainsi dire une voie obligée, à moyen terme, pour l'industrialisation des pays africains, elle ne saurait se substituer à l'existence du développement des capacités technologiques nationales. Les contraintes liées au transfert, et plus encore les obstacles et les limites dressés par les fournisseurs invitent ces pays à développer leurs propres stratégies d'accès à la technologie. C'est encore possible avant le décrochage total qu'imposeront aux pays attardés les nouvelles révolutions scientifiques et techniques qu'annonce le XXIème siècle.

Des Stratégies du Possible

Nul ne le conteste avec sérieux: les matières premières ont une valeur économique extrêmement faible aujourd'hui. On n'a cessé de dire

par exemple que la Guinée est "un scandale géologique", pourtant ce pays d'Afrique Occidentale s'est enfoncé irrémédiablement pendant un quart de siècle dans le sous-développement. Le Tchad est un important producteur de coton, mais avant même la guerre qui le ravage depuis une décennie, ce pays de l'Afrique Centrale restait désespérément pauvre.

Le facteur technologique a fondamentalement modifié les données de base de la théorie ricardienne des avantages comparatifs. La thèse de la souveraineté sur les ressources naturelles n'aura de valeur que si les pays en développement peuvent exercer effectivement cette souveraineté, et ils ne le peuvent "qu'en fournissant des efforts considérables pour affermir leurs capacités technologiques nationales"⁶². Mais comment?

Les réponses fusent, aussi bien des chercheurs que des institutions internationales. Les solutions proposées sont en général techniques, davantage que stratégiques. Certes il faut laisser la parole à l'expérience de ces pays qui, dans le Tiers Monde, semblent avoir trouvé la voie (A). Mais il faut désormais la prolonger de cette dimension de la ruse qui, à travers l'histoire, a fait la grandeur des grands hommes et donné leur salut aux grandes nations. Prométhée voleur de feu! (B)

A./ Ces expériences qui viennent du Tiers Monde

Les pays d'Afrique Sub-saharienne souffrent, à l'exception peut-être du Nigéria, du manque d'une véritable politique de développement technologique. Le transfert de technologie se fait au coup par coup, sans articulation avec la politique économique, et notamment avec la politique industrielle, à supposer qu'il y en a une. Or il est bien certain que le transfert ne devient vecteur du développement que lorsqu'il est articulé sur une politique industrielle cohérente définissant avec précision la part de l'effort national dans le développement des techniques industrielles, et le complément d'importation. A défaut, il peut préparer le terrain au décollage industriel, sans jamais créer les conditions du développement des capacités technologiques nationales. C'est bien ce qui s'est passé depuis près de trente ans dans les pays de l'Afrique Sub-saharienne, et l'on comprend que dans l'ensemble leurs progrès dans le sens du développement ait été aussi lents, voir nuls dans certains cas.

Parallèlement, d'autres pays du Tiers Monde comme la République de Corée, le Brésil, l'Inde, et la Chine pour n'en mentionner que quelques uns, étaient en plein essor. Pour différentes qu'elles soient, les stratégies d'industrialisation choisies par ces pays se sont révélées dans l'ensemble très payantes. Elles sont, dans tous les cas, fondées sur

l'encouragement à la production nationale de biens d'équipement. Pour y parvenir ces quatre pays ont adopté des mesures assez semblables tenant en quatre points:

(a) La création d'une industrie nationale de biens d'équipement

La Chine, et dans une certaine mesure l'Inde, ont suivi dans ce domaine l'exemple de l'URSS⁶³ en mettant l'accent sur l'industrie lourde qu'ils ont mise sur pied avec l'aide des pays socialistes. La Chine qui pendant longtemps n'a guère eu de contacts technologiques avec le reste du monde, a commencé en 1973 à importer des usines clés en main pour ses industries métallurgique, chimique, charbonnière et pétrolière⁶⁴. Par la suite elle a mis l'accent sur l'importation de technologies en passant des accords de licence⁶⁵. L'Inde développe quant à elle une stratégie d'accords de collaboration avec l'étranger dans ce secteur, en particulier pour la fabrication de matériels complexes⁶⁶.

Au Brésil, les importations de biens d'équipement, autrefois encouragées officiellement par diverses mesures tarifaires⁶⁷, fiscales et monétaires, sont en général découragées depuis 1974. Parallèlement la production nationale de biens d'équipement a été encouragée par divers moyens douaniers et fiscaux. En République de Corée, l'importation des biens d'équipement qui était largement favorisée dans les années 1960 et au début des années 1970 par des exemptions de droits de douanes et d'autres mesures de type monétaires a été interrompue à partir de 1973. Avec ce changement de politique qui intervient presque à la même période qu'au Brésil, le gouvernement Coréen n'accorde d'exemption de droit à l'importation de machines et de matériels que s'ils sont absolument indispensables à la fabrication, s'ils incorporent les innovations technologiques et ne sont pas produits dans le pays⁶⁸.

(b) La protection de cette industrie

L'ampleur d'une telle protection est variable d'un pays à l'autre, mais dans tous les cas elle existe. L'Inde en particulier applique une politique protectionniste extrêmement sévère, non seulement aux importations des marchandises, mais aussi aux investissements étrangers et, dans une moindre mesure à l'importation de technologies incorporelles. Elle protège notamment la fabrication locale de biens d'équipement par une politique de contrôle des importations qui prévoit l'octroi de licences d'importation pour les marchandises jugées indispensables et que les entreprises locales ne fabriquent pas⁶⁹. En 1968-69, cette protection atteignait un niveau de 119,6% pour le matériel électrique et 87,8% pour les marchandises non électriques.

Jusqu'en 1973, une telle protection était totale dans le cas de la Chine dont l'industrialisation fondée au début sur la coopération avec l'URSS s'est par la suite totalement endogénéisée. Depuis 1974, le Brésil applique lui aussi une politique à tendance protectionniste à l'importation des biens d'équipement, mais non aux investissements étrangers directs. Quant à la République de Corée, elle assure également une protection extrêmement efficace de son industrie grâce à un couplage des mesures douanières et d'autres mesures sélectives. Le niveau de protection par le biais des droits de douanes n'indique donc pas le taux effectif de protection industrielle dans ce pays⁷⁰.

(c) Le Contrôle étatique du transfert de technologie

En Chine et en Inde, les accords de transfert de technologie sont soumis à l'agrément de l'Etat. La Chine a promulgué des directives pour la négociation des accords de technologie, et en 1985, une loi était en préparation sur la question⁷¹. L'Inde applique pour sa part un système complexe d'évaluation et d'approbation des accords de collaboration avec l'étranger, surtout afin d'atténuer l'effet des restrictions imposées par ces accords et de limiter à des montants raisonnables les redevances directes versées en paiement. La loi indienne en la matière, le Foreign Exchange Regulation Act de 1973 limite à 40% la participation avec droit de vote des sociétés étrangères dans les entreprises⁷². "Grâce à cette loi, les entreprises sous contrôle étranger n'occupent plus une position dominante que pour quatre gammes de produits du secteur des biens d'équipement, contre 15 en 1964"⁷³.

Au Brésil, l'Institut national de la propriété industrielle (INIPI), organisme chargé de l'examen sélectif des contrats de transfert de technologie, exerce un contrôle sur les modalités des accords afin d'atténuer l'effet des pratiques restrictives, de régler la durée des contrats et d'éviter des redevances excessives pour l'importation de technologie⁷⁴.

Il est encourageant de constater que certains pays d'Afrique Sub-saharienne, à l'instar du Nigéria, ont mis en place des politiques similaires. Le décret de 1979 précité, portant création de l'Office national de la propriété industrielle du Nigéria "est peut-être l'instrument juridique le plus complet adopté à ce jour en Afrique en matière de transfert de technologie"⁷⁵. L'Office national est chargé, d'une manière générale, de superviser la sélection et l'acquisition de technologies étrangères, tout en encourageant les acquéreurs à utiliser au mieux celles-ci au profit de l'économie nationale. A ce titre, il reçoit les demandes d'enregistrement d'accords de transfert de technologie,

évalue, autorise et enregistre ces accords, et en suit l'exécution. Tous les accords présentés à l'Office national sont évalués en fonction des critères énoncés dans le décret, ainsi que d'autres critères économiques et techniques⁷⁶. L'Office national a aussi pour fonction d'encourager l'identification et la sélection rationnelle de la technologie, le développement des aptitudes des Nigériens à la négociation et une adaptation judicieuse de la technologie importée⁷⁷. Il s'est efforcé surtout d'améliorer les conditions et modalités des contrats en faveur des entreprises nigériens. Ces entreprises ont d'abord réagi défavorablement à ce qui leur apparaissait comme un obstacle administratif supplémentaire, mais elles en sont venues à apprécier de plus en plus le rôle de l'Office national et nombre d'entre elles s'adressent aujourd'hui aux autorités pour leur demander de les aider officieusement dans la négociation des contrats⁷⁸.

(d) L'encouragement de la recherche-développement dans le secteur des biens d'équipement

En ce sens, il a été créé en Inde un certain nombre d'Instituts de recherche, dont l'Institut central de machine- outil et l'Institut central de recherche sur l'énergie électrique. En Chine, le Ministère des Industries mécaniques possède 61 instituts de recherche dont 11 polyvalents, 15 spécialisés dans le matériel de centrales électriques, 7 spécialisés dans les machines-outils. En outre, 54 instituts relèvent de directions locales et 91 appartiennent à des entreprises⁷⁹.

Il n'existe pas au Brésil d'institut de recherche spécialisé pour le secteur des biens d'équipement, mais certains grands instituts, comme l'Institut de recherche technologique (ITP) de Sao Paulo, sont très actifs dans le secteur de la construction mécanique. En outre, pour renforcer la compétitivité des producteurs nationaux de biens d'équipement, il a été créé des caisses spéciales de développement technologique chargées de couvrir diverses activités de développement technologique ainsi que des importations de technologie.

Comme l'Inde et la Chine, la République de Corée a adopté elle aussi la politique des instituts de recherche pour encourager le développement technologique de l'industrie des biens d'équipement. L'Etat coréen a créé de grands instituts de recherche, comme l'Institut coréen de la mécanique et de la métallurgie (KMM), et l'Institut coréen supérieur de science et de technologie (KAIST).

Comme le conclut l'étude effectuée par le Secrétariat de la CNUCED:

"Il est clair que dans ces quatre pays en développement qui appliquent des stratégies d'industrialisation différentes et ont des systèmes socio-politiques très distincts, la fabrication nationale de biens d'équipement a pu se développer ces dernières années parce que les pouvoirs publics ont pris des mesures expressees à cet effet"⁸⁰.

Mais de telles stratégies ne sont-elles pas irréalistes pour les pays de l'Afrique Sub-saharienne qui manquent pour la plupart les bases nécessaires pour le développement d'une industrie de biens d'équipement?

Non assurément. Car il ne s'agit point de privilégier, encore moins de préférer, l'industrie des biens d'équipement qui fait appel à une technologie généralement très avancée, en tout cas très complexe, par rapport à des technologies plus simples et moins coûteuses. La stratégie préconisée est celle d'une approche couplant le développement des technologies avancées, voire de pointe, avec la promotion et la vulgarisation des technologies facilement maîtrisables et accessibles à la grande masse des populations de nos pays.

S'agissant des technologies avancées et autres technologies relatives à la production des bien d'équipement, les stratégies mises en place par les quatre pays précédemment considérés peuvent être complétées par d'autres types de politiques.

Ainsi par exemple, la politique des marchés publics peut influencer sur le développement technologique de l'industrie nationale⁸¹. Quant au transfert de technologie, il peut emprunter d'autres voies que le canal des firmes transnationales, bien que l'on ait établi une relation intime entre sociétés multinationales et technologie⁸². La filière du transfert de technologie par les petites et moyennes entreprises (PME) apparaît parfois d'une efficacité supérieure à celle des multinationales, bien qu'elle reste insuffisamment explorée. Des études récentes montrent pourtant que certaines PME japonaises par exemple ont joué un rôle particulièrement appréciable dans le transfert de technologie en particulier en direction des pays asiatiques⁸³. L'intérêt et l'efficacité de ces entreprises tient à la modestie de leur taille qui les rend plus facilement contrôlables, à leur très grande spécialisation, et surtout à la simplicité de leurs méthodes de transfert⁸⁴.

Quant aux technologies simples adaptées au milieu rural et à l'artisanat, l'expérience montre qu'elles assurent une fonction de dynamisation et de transformation du milieu, en particulier dans les pays encore arriérés comme le sont la plupart des pays de l'Afrique Sub-saharienne. Grosses pourvoyeuses d'emploi à une main d'oeuvre non nécessairement qualifiée, elles répondent par leur maniabilité aux besoins de la frange la plus importante de la population et concourt à l'amélioration de la productivité, notamment dans l'agriculture, ainsi que les conditions de vie et de travail en milieu rural et dans l'artisanat urbain. Une étude récente de la CNUCED a montré l'impact de telles technologies dans le secteur des ouvrages en métal et des constructions mécaniques et électriques en Sierra Leone⁸⁵. Par ailleurs, elles préparent les producteurs locaux de ces technologies à la maîtrise de technologies plus perfectionnées. Ainsi, par exemple, le Népal est-il parti de la fabrication de petites installations hydro-électriques à commande mécanique aux coûts très faibles et aux techniques simples pour éclairer ses petits villages perdus dans les montagnes, à la production locale de petites centrales hydro-électriques faisant appel à une technologie plus élaborée⁸⁶.

La leçon tient en une phrase: A chaque peuple de mettre en valeur son génie. Dans le contexte moderne cela suppose des hommes bien formés, au diapason des mutations scientifiques qui secouent le monde, en quête et à l'affût de l'innovation.

B./ La leçon des mythes

La mythologie grecque serait-elle incontournable en tant que moyen de connaissance et de compréhension du monde? Le couple Prométhée et l'Homme de la caverne de Platon semble représenter les deux figures de la technologie et de la science. Deux figures inversées à vrai dire car la science entendue comme connaissance fondamentale de son objet, précède la technologie entendue comme procédé de fabrication ou comme méthode de solution d'un problème technique. La science précède la technologie comme le savoir-pourquoi (know-why) précède le savoir-faire (know-how). Prométhée apporta le feu aux hommes, c'est-à-dire un produit; l'Homme de la caverne leur apprit comment accéder à la lumière de la Raison, c'est-à-dire comment répondre à la question du pourquoi. Les deux démarches participent de la même ambition: celle de sauver les hommes. Ceux qui s'assignent cette mission trouvent là leur supériorité sur les autres hommes.

Pareillement, la puissance et suprématie des nations modernes sont assises sur la maîtrise de la science et de la technologie. Les pays

d'Afrique Sub-saharienne sont bien loin du compte, car à la faiblesse de leurs ressources s'ajoute une absence de stratégie d'accès aux connaissances technologiques géométriquement éloignées de leur aire géographique. La majorité des brevets déposés dans ces pays - comme dans tous les pays en voie de développement du reste - sont détenus par les grandes firmes américaines, allemandes, britanniques, suisses et françaises⁸⁷. C'est que l'effort financier consenti par nos pays pour la recherche-développement est dérisoire au regard des besoins et en comparaison avec d'autres pays du Tiers Monde, et plus encore avec les pays développés.

A titre purement indicatif, le Niger consacrait en 1976 seulement 0,1% de son PNB à la recherche-développement (soit 570.000 dollars E.U., environ 171 millions de F.CFA avec 1\$ à 300 F.CFA), et le Malawi 0,2% en 1977 (soit 1.486.000 dollars), contre 0,6% pour le Brésil (soit 993.356.000 dollars) en 1978, 0,6% pour l'Argentine (soit 743.187.000 dollars) en 1980, 0,7% pour la République de Corée en 1981 (soit 418.400.000 dollars), 2,4% pour RFA en 1979 (soit 19.327.556.000 dollars) et 2,4% pour le Japon en 1981 (soit 27.204.893.000 dollars)⁸⁸.

Pour nécessaire qu'il soit, le transfert de technologie ne saurait se substituer aux efforts nationaux de recherche-développement⁸⁹.

La découverte et l'innovation scientifique constituent aujourd'hui on l'a dit, la base de la richesse et de la puissance des nations⁹⁰. Mais elles sont soumises à certaines pré-conditions:

Et d'abord l'existence d'un personnel scientifique nombreux et hautement qualifié, en sorte que même en cas de transfert de technologie, puisse jouer la symétrie des experts et des compétences, c'est-à-dire le principe dit de "l'homologue national"⁹¹. Bien sûr une formation non articulée sur une politique globale de développement risque d'entraîner ce que l'on convient d'appeler le "transfert inverse de technologie"⁹². Mais la mise en oeuvre de la formule très à la mode "adéquation formation-emploi", est-elle réellement possible? Et doit-on abandonner l'autre slogan bien connu, "priorité à la formation"? Peut-être pas vraiment. Toutefois la formation doit "accompagner le développement" afin d'éviter les graves déperditions que ne manquerait pas d'entraîner une formation non planifiée ou par trop anticipatrice⁹³.

Ensuite, l'existence des moyens matériels de la recherche. Or laboratoires et équipements perfectionnés coûtent extrêmement chers, et

ne sont pas à la portée de la plupart des pays africains en cause.

En plus de nombreux centres régionaux ou sous-régionaux de formation⁹⁴ implantés parfois suivant des considérations politiques plutôt que scientifiques, une autre approche de ce problème pourrait consister au développement des pools technologiques pluri-Etats, constitués autour des centres transnationaux de recherche implantés en fonction du potentiel scientifique et technologique des pays d'accueil.

Enfin, revenons-en à la leçon du mythe. Lorsque Prométhée déroba dans le ciel le feu sacré et le transmit aux hommes, il prit un risque et il en paya le prix: Zeus, pour le punir l'enchaîna sur le Caucase où un aigle lui rongéait le foie, qui repoussait sans cesse. Mais grâce à lui, dit le mythe, naquit la première civilisation humaine. L'audace et la ruse sont les armes du pauvre.

Si elle ambitionne de se développer, l'Afrique Sub-saharienne se doit d'aller à l'assaut de la science et de la technique partout où celles-ci se trouvent. Prométhée vola le feu, on ne le lui donna pas. Quand on sait combien d'ingénieurs et autres spécialistes déjà bien formés localement (certaines sources les estiment à environ 4.000) la République de Corée envoie annuellement en perfectionnement aux Etats-Unis, on ne peut s'empêcher de dire que l'Afrique Sub-saharienne dort encore.

Conclusion

Les études montrent que dans l'ensemble, le tournant décisif de l'industrialisation des pays en développement disposant actuellement d'une certaine maîtrise technologique, et qui frappent à l'entrée du club des pays industrialisés, se situe globalement autour des années 1970, avec l'élaboration de véritables politiques technologiques et l'adoption des mesures législatives conséquentes. L'Afrique Sub-saharienne était en dehors du mouvement. Pour elle, il est encore temps avant qu'il ne soit trop tard.

Comme le déclare le préambule du Projet de code international de conduite pour le transfert de technologie, "la technologie ouvre la voie au progrès de l'humanité et [...] tous les peuples ont le droit de profiter des perfectionnements et des innovations de la science et de la technologie pour améliorer leur niveau de vie"⁹⁵. *Il y aura d'autres Japon!* le Brésil, la République de Corée, l'Inde, l'Argentine, Singapour et le Mexique s'annoncent. Demain peut-être l'Afrique du Nord. Reste à l'Afrique Sub-saharienne d'apprendre la leçon.

Notes

* Chargé de Cours à l'IRIC. B.P. 1637, Yaoundé, Cameroun.

1. Voir entre autres celles proposées par la CNUCED, in Lorenz Stampfli: Le transfert de technologie: les efforts actuels pour une réglementation internationale, Berne, Editions Peter Lang, 1980, p. 7; Robert A. Solo et Everett M. Roger: Inducing technological change for economic growth, Michigan, Michigan State, University Press, 1972, p. 3; Collins NGWA: "The technology and African emancipation" (Paper presented for discussion at the second southern african, Universities social sciences Conference held at Dar-es-Salaam (Tanzania), 23- 27 June 1979, p. 3).

2. V. Silvère Seurat: Réalités du transfert de technologie, 2ème édition, Paris, Massor, 1978, p. 34.

3. J. Dhombres: "Le transfert de technologie" in Progrès Scientifique, Mai-Juin, 1977; Silvère Seurat: *op. cit.*, p. 34.

4. V. Projet de Code international de conduite pour le transfert de technologie tel qu'il se présentait le 4 Novembre 1983. (TD/COETDT/41, Nations-Unies, New York, 1983, p. 1).

5. V. Annuaire de l'Afrique du Nord (AAN), Vol. XV, 1976 regroupant une série d'études sous le titre "Technologies et Développement du Maghreb", p.3-251; AAN, Vol. XIII, 1974 regroupant une série d'études sous le titre: "Les stratégies des matières premières au Maghreb", p. 3-207; G. Destane de Bernis: "La Lybie et l'Algérie: Stratégies de développement comparées", AAN, Vol. X, 1971, p. 267-296.

6. V. Denis Coulet: The uncertain promise. Value conflicts in technology transfert, IDCC/North America, Inc., New- York, 1977, 320 p.; p.17; Sidiki Diakité; Violence, technologique et Développement, Paris, l'Harmattan (Point de Vue), 1985, 153 p.

7. Elles sont tirées du Rapport de la Commission Economique pour l'Afrique (CEA) à la conférence annuelle du Conseil des Chefs d'Etats de l'UDEAC (Libreville, 17-19 Décembre 1981) intitulé: Mission d'évaluation de l'UDEAC et possibilités d'élargissement et de la coopération en Afrique Centrale, 1981, p. 2.

8. V. les données indicatives sur la part du PNB affectée à la R- D dans la IIIe partie de cette étude.

9. Voir entre autres Sidiki Diakité: *op. cit.*, pp.113 et S.

10. Pour le cas des Etats-Unis par ex., voir J.C. Derian et A. Staropoli: La technologie incontrôlée? Une présentation du "technology-assessment" Préface de Harvey Brooks Paris, PUF, 1975, 204p.

11. C'est le cas par ex. du Nigéria avec le décret portant création de l'Office national de la propriété industrielle promulgué le 24 Décembre 1979 et entré en vigueur en 1980, de

l'Éthiopie avec la Proclamation n° 235/1983 promulguée le 22 Janvier 1983, du Ghana avec la loi n°437 du 1e Août 1981 instituant le Code des investissements, du Soudan avec la loi d'Avril 1980 sur l'encouragement à l'investissement.

12. Jones Graham: The role of science and technology in developing countries. With an Introduction by Professor Lord Bickett. Oxford University Press, London, New-York, Toronto, 1971, 174p.; p.5.

13. V. Report of the United Nations Conference on Science and Technology for Development, Vienna, 20-31 August 1979 (United Nations Publication, Sales n°E.79. I-21. and Corr. chap. VII).

14. V. General Assembly Resolution 35/36 of December 1980. Annex, par. 117-118.

15. Allant de la substitution des machines - rapides, régulières, précises, infatigables à l'homme, à sa compétence et à ses efforts, la substitution de sources d'énergie inanimées aux sources animées, en particulier l'introduction de machines à convertir la chaleur en travail moteur, à l'usage de nouvelles matières premières beaucoup plus abondantes, en particulier la substitution des substances minérales aux substances végétales ou animales.

16. David S. Landes: L'Europe technicienne-révolution technique et libre essor industriel en Europe occidentale de 1750 à nos jours. tr. de l'anglais par Louis Evrard. Paris, Gallimard, 1975, 779 p. - p.63.

17. V. Gilbert Etienne: "Dans le monde rural asiatique: des innovations techniques inévitables" in La fin des outils. Technologie et domination (ouv-coo) Paris, PUF (Cahiers de l'IUED - Genève). 1977, 333 p., p.55.

18. CNUCED: A strategy for the technological transformation of developing countries. Une publication. TD/277/Rev. 1, 1985. p.2.

19. V. Rapport du Secrétariat de la CNUCED: Autres et nouvelles, activités et initiatives: a) Liaisons inter-régionales et arrangements de coopération entre pays en développement pour leur transformation technologique. TD/B/C.6/118 du 24 Août 1984, p.3.

20. *Ibid.* Annexe II.

21. *Ibid.* p.3.

22. Même dans le domaine des industries manufacturières la part de l'Afrique dans la valeur ajoutée mondiale n'a évolué que très faiblement. En 1975 elle n'était que de 0,8% contre 4,8% pour l'Amérique Latine, et 2,5% pour l'Asie du Sud-Est. Elle ne s'était ainsi accrue que de 0,1% par rapport à 1960 où elle était de 0,7%. Encore cet accroissement est-il imputable surtout à l'essor industriel des pays nord-africains et à quelques rares pays sub-sahariens qui à l'instar de la Côte d'Ivoire, du Kenya et dans une moindre mesure le Zaïre et le Cameroun avaient fortement développé leurs industries de substitution au cours de cette période. (cf. Rapport de la CEA précité P.2).

23. CNUCED: Le secteur des biens d'équipement dans les pays en voie de développement. Problèmes technologiques et options politiques. N.U., New York, 1985, 205p, p.13.

On pourrait y adjoindre l'exemple plus récent encore des nouveaux pays industriels comme le Brésil, l'Inde, l'Argentine, la République de Corée, le Mexique, etc.

24. V. Monographies sur le transfert de technologie: politiques de transfert et développement de la technologie dans le Japon d'avant guerre (1936-1937) Etude du Secrétariat de la CNUCED (TD/B/C.6/26 et Le renforcement de la capacité technologique de l'URSS. TD/B/C.6/52. Etude établie par M.G.E. Skorov à la demande du Secrétariat de la CNUCED.

25. V. N. Rosenberg: Perspectives on technology. Cambridge University Press, 1976, p.99.

26. V. Problèmes qui se posent dans des secteurs d'importance critique pour les pays en développement. c) Energie. Analyse comparative des techniques utilisées pour favoriser l'exploitation pétrolière dans trois pays d'Afrique de l'Ouest: Cameroun, Côte d'Ivoire, Guinée-Bissau. Rapport du Secrétariat de la CNUCED, TD/B/C.6/117, 1er Août 1984, p.5.

27. Samir Amin: "Développement auto-centré, autonomie collective et nouvel ordre économique international. Quelques réflexions", in: L'Avenir industriel de l'Afrique. Paris, l'Harmattan-ACCT, 1980, p. 23.

28. Alexandre Faire "Stratégies du nord et stratégies du Sud. Quelques hypothèses" in L'Avenir industriel de l'Afrique. *op. cit.*, p.42.

29. V. Michel Henry: "Du transfert à la maîtrise des technologies?" Avant-propos à la série d'Etudes réunies sous le titre Technologies et Développement au Maghreb. AAN, Vol. XV, 1976, p.6.

30. Discours d'ouverture du Colloque sur Les contrats internationaux de coopération industrielle et le nouvel ordre économique international (sous la direction de Jean D'Herbes, Jean Touscoz, Paris, PUF 1980, 351 p.) par le Recteur Paul Pastour.

31. Elise Mendoza Berrueto: "Transfert de technologie et investissements étrangers et la Charte des Droits et Devoirs économiques des Etats" in Justice économique internationale, Paris, Gallimard, 1976, 293p, p.148.

32. V. M. Henry art. précité, p. 7.

33. V. Problèmes technologiques dans le secteur de l'énergie des pays en développement. Incidences technologiques de la politique des marchés publics: l'expérience du secteur des centrales électriques en République de Corée. Rapport du Secrétariat de la CNUCED TD/B/C.6/105, Juin 1984, p.1.

34. Kamal A. Bouguerra et Hubart Michel: "Essai de développement par consommation massive de technologie: le cas de l'Algérie", in AAN, Vol. XV, 1976, précité, pp. 123-134.

35. V. Questions technologiques dans le secteur de l'énergie des pays en développement... doc. précité, p. 5.

36. *ibid.*, pp. 5-7.

37. *Ibid.*, p.5.

38. On estime cependant que si le gouvernement Zimbabwéen avait procédé à l'augmentation réclamée du prix de l'essence, les deux produits seraient à égalité de prix; aussi le prix pratiqué pour l'éthanol est-il ramené à 43,6 c/l, soit presque identique à celui de l'essence.

39. V. Problèmes qui se posent dans des secteurs d'importance critique pour les pays en voie de développement. c) Energie... doc. précité pp. 1-3.

40. C'est le cas en particulier des producteurs de pétrole de l'Afrique Centrale.

41. Michel Henry: in *op.cit.*, p. 14.

42. V. Déclaration et Plan d'action de Lima concernant le développement et la coopération industrielle. (publication de l'ONUDI, PI/38, par. 28).

43. CNUCED: Un Code international de conduite pour le transfert des techniques. (publication des Nations-Unies TD/B/C.6/AC.A/2Supp. 1/Rev.1) New York, 1975, 66p; p. 3 par. 11.

44. M. Henry: in AAN Vol. XV, précité, p. 14.

45. V. Avant-propos à l'ouvrage collectif: La fin des outils, op. cit., p. 13.

46. V. Dimitri Germidis: "Technology transfer, Regional co-operation and Multinational firms", in Vol. II. edited by Dimitri Germidis, Paris, OECD 1977, 258 p; p. 26.

47. V. Un code international de conduite pour le transfert des techniques; N.U., New York, 1975, p. 12.

48. Pour des références bibliographiques relatives à ces études, V. *Ibid.* note n°16, p. 12.

49. *Ibid.*, p.2.

50. La formule est de la partie camerounaise dans le procès qui l'oppose à la firme allemande devant le Centre International pour le Règlement des différends relatifs aux investissements (CIRDI).

51. A noter que cette firme avait donné elle-même au Gouvernement camerounais des garanties sur la rentabilité du projet.
52. V. Le Mémoire en république du Cameroun dans l'affaire Le Groupe Klockner c/République Unie du Cameroun, 18 Mars 1983.
53. Jack Baranson: Technology and the Multinationals. Lexington Books, Lexington, Massachusetts. Toronto, 2ème éd., 1979, Préface, p.XI.
54. M. Henry in AAN., Vol. XV, 1976, précité, p. 7.
55. V. Projet de code international de conduite pour le transfert de technologie tel qu'il se présentait le 4 Novembre 1983. TD/CODE/TOT/41, p.4.
56. V. Le rôle du système des brevets dans le transfert des techniques aux pays en voie de développement. TD/B/AC.11/10/Rev.1, Nations Unis, New York 1975, p. 48.
57. *Ibid.*, p. 49.
58. V. Daniel Behrman: Science and technology in development - A Unesco approach. Paris, UNESCO, 1979, 104p; p. 31.
59. V. John V. Granger: Technology and international relations. W. H. Freeman and Company, San Francisco, 202p, p. 31.
60. V. M.M. Bogoslavsky: Legal questions involved in technical assistance of the USSR to foreign countries and licensing agreements. Moscow, Academy of Science of USSR, 1963.
61. V. Charles Chukwuma Okolie: Legal aspects of the international transfert of technology to developing countries. Preager Publishers, New York, 1975, 187p, p.138.
62. V. Problèmes technologiques dans le domaine de l'énergie dans les pays en voie de développement: Mise en valeur du potentiel technologique de l'industrie pétrolière au Pérou. U/CTAD/TT/59, 3 Déc. 1984, Etude établie par M. Eléodoro Mayorga - Alba en coopération avec le Secrétariat de la CNUCED, p.1.
63. Pour l'approche adoptée par l'URSS, voir Renforcement du potentiel technologique en URSS. Etude établie par le Professeur G. E. Skorov (TD/B/C/6/52).
64. V. Zhang Renyu: Problèmes technologiques dans le secteur des biens d'équipement: l'expérience de la République populaire de Chine (CNUCED/TT/57).
65. Entre 1975 et 1981, elle a signé 153 contrats de transfert de technologie. V. Le secteur des biens d'équipement dans des pays en développement. *op. cit.*, p. 103.

66. V. Problèmes de technologie dans le secteur des biens d'équipement: monographie relative aux grands producteurs indiens de machines. (CNUCED/TT/55). De 1971 à 1980 l'Inde a signé 550 accords concernant les machines-outils. Dans l'ensemble les accords relatifs aux biens d'équipement (1759 au total) représentent 58% de tous les accords de collaboration conclus en Inde de 1971 à 1980 (3030 accords au total).
67. V. Problèmes technologiques dans le secteur de biens d'équipement: monographie relative aux grands producteurs d'outillage industriel au Brésil (TD/B/C.6/A.C.7/6 et corr.1).
68. V. A.Amsden and L. Kim: "Korea's technology exports". Banque Mondiale, Washington, D.C. 1982 (ronéographie).
69. V. J.M. Bhagwati et T.N. Srinivasan: Foreign trade regimes and economic development - India (New York: National Bureau of Economic Research, 1975), chap. 2.
70. Le secteur des biens d'équipement dans les pays en développement... *op. cit.*, p. 105.
71. *Ibid.*, p. 103.
72. V. la monographie relative à l'Inde précitée.
73. Le Secteur des biens d'équipement dans les pays en voie de développement... *op. cit.*, p. 104.
74. *Ibid.* p. 105.
75. V. CNUCED: Restructuration de l'environnement juridique: Lois et règlements nationaux sur le transfert, l'acquisition et le développement de la technologie. (TD/B/C.6/111 du 17 Août 1984) p. 1.
76. Aux termes du décret, le Directeur de l'Office n'enregistre pas les accords dans les cas-ci-après: lorsque l'objet de l'accord est une technologie librement disponible au Nigéria. Lorsque le prix ou tout autre élément à évaluer à cet effet, est fixé à un niveau disproportionné par rapport à la technologie en cause; lorsque la partie acquéreur est obligée de soumettre à une juridiction étrangère tout différend éventuel; ou lorsqu'il s'agit de l'une quelconque des pratiques restrictives mentionnées dans le décret.
77. Article 4 du Décret de 1979.
78. V. Restructuration de l'environnement juridique... doc. précité p. 3.
79. Le secteur des biens d'équipement dans les pays en développement *op. cit.*, p. 104.

80. *Ibid.*, p. 106.

81. C'est notamment le cas dans le secteur de l'énergie en République de Corée. V. Problèmes technologiques dans le secteur de l'énergie des pays en développement. Doc. précité, p. 1.

82. V. Keith Pavitt: "The multinational entreprise and transfer of technology", in The multinational entreprises. Edited by John Dunning London, George Allen of Unwin Ltd., 1971, p. 61.

83. V. CNUCED: Autres nouvelles activités et initiatives: b)Rôle des petites et moyennes entreprises dans le transfert international de technologie. (TD/B/C.6/119, 30 Juillet 1984), p. 11.

84. On observe par exemple que "la majorité des PME japonaises ont tendance à axer leurs transferts de technologie sur l'atelier de production et à y faire participer les ouvriers de l'usine en organisant des programmes de formation. Cette méthode permet d'utiliser efficacement la main d'oeuvre locale dans l'atelier de production et donc de faire baisser les coûts et d'améliorer la qualité des produits" *Ibid.*, p. 12.

85. V. CNUCED: Perspectives technologiques et perspectives de développement du secteur des ouvrages en métal et des constructions mécaniques et électriques en Sierra Léone. (UNCTAD/TT/75, Nations-Unies, 1986), 48p.

86. V. CNUCED: Problèmes technologiques relatifs au secteur de l'énergie dans les pays en développement: petits projet hydroélectriques au Népal (TD/B/C.6/116, 9 Août 1984), 15p.

87. V. UNIDO: Draft Report on Forms and impacts of redeployment of industries to developing countries Vienna, Austria, 20-21 September 1979; et CNUCED: Le Rôle du système des brevets... doc. précité.

88. CNUCED: Accès des pays en développement aux technologies qui sont dans le domaine public. Doc. précité. Tableau de l'annexe.

89. V. Plan d'action mondiale pour l'application de la science et de la technique au développement. Nations- Unies, New York, 1973, 345p.. en particulier le chapitre III intitulé: "Création de Bureaux et laboratoires scientifiques et techniques dans les pays en voie de développement" pp.38 et S.

90. V. notamment John V. Granger: Technology and international relation *op. cit.*, p. 35.

91. V. Alain Langlois: "l'approche multilatérale du transfert de technologie: l'action de l'ONU et des institutions spécialisées au Maghreb" AAN, Vol. XV, 1976, p. 85.

92. V. Examen des modes d'approche et des mesures envisageables au sujet du transfert

inverse de technologie. Note du Secrétariat de la CNUCED (TD/B/AC. 35/11, 18^e Juin 1985), 12p.

93. V. François Viallet: "Systèmes de formations et maîtrise des techniques industrielles" ANN., vol. XV, 1976, précité pp. 111-119.

94. On dénombreait en 1981 une dizaine de centres de formation de ce genre en Afrique sub-saharienne. (V. UNDP publication TCDC News No.11, Oct-Déc. 1981, p.3), cité par Colins NGWA: Rapport au colloque précité p. 17.

95. V. CNUCED: doc. précité, p.iii.

SUMMARY

One finds an avalanche of studies on the transfer of technology. Of these, very few have focussed on Africa. The article addresses itself to this lacuna by pointing the significance and scope of new data on the transfer of technology in Sub-Saharan Africa. Is there any hope that Sub-Saharan Africa will take advantage of the transfer of technology to promote its own development?

Such a simple question calls for a complex answer. Technology is a component of the modern state power and indeed a necessity for the development of African countries. However technology is too expensive a commodity for most Sub-Saharan African countries. Nonetheless Africa is a major consumer continent and suppliers can therefore increase the technological dependence of Africa by selecting the technologies to be transferred and thus establishing a new international division of labour based on the contrast generators producers and reproducers/consumers of technology.

Such an awareness leads to the following reflection the major parts of which are:

I. Transfer of technology appears as a strong necessity with a two-fold implication. Indeed, the prospects of modern economy and better living conditions it offers make it a catalyst of development on the one hand while on the other hand it also acts as a new factor of dependence especially in Sub-Saharan Africa

which is at the periphery of technology producing centres.

II. This transfer toward Sub-Saharan Africa and on a larger scale toward the Third World is however hampered by the scope of the technological stake for two reasons. One, technology is a major profit making factor of multinational corporations and, as such, constitutes a corner-stone in their world strategies; two, it now appears as an element of power of industrialized countries, becoming therefore crucial in their strategies of foreign policy. These countries and their companies have taken a stance which can be summed up as "One Japan is enough".

III. Nevertheless a number of strategies are still open to Africa. These may be based on the experience of Third World countries like China, Brazil, the Republic of Korea, Argentina, India, Mexico etc. which have apparently found their own course or on a Promethean strategy geared toward the development of national technological capacities. Such a development could be achieved by sending abroad scientists with a strong local training background to embark on the study of science and technology wherever such a training is available, just as Prometheus stole fire from heaven.

There will be other Japans!

THE ROLE OF TECHNOLOGY IN THE PROCESS OF ECONOMIC DEVELOPMENT

Ron Matthews*

I. Introduction

This paper focuses attention on the beneficial effects ensuing from the promotion of capital goods production in developing countries. It is essentially a theoretical review of the established fragmentary literature on the subject, having the advantage of bringing the various arguments together in one compositive article. The discussion is necessarily generalized to the global context because it is obviously only outside Africa where capital goods production furrows have already been ploughed. However in deference to the primarily African readership of this journal a concluding section has been added aimed briefly at assessing the technological development strategies open to black African administrations in the post- Monrovia era.

II. Capital Goods and Industrialization

Capital goods mean different things to different people, but common to most interpretations, however, is the centrality of machinery. The capability to produce machines has been perhaps the most sought-after attribute of industrialization since the initial mechanical revolution occurred some two centuries ago. The importance of mechanical practice has regard not only to the provision of reproducible capital in the economy, thus making a substantial contribution to improvements in the productivity of labour, but, additionally, it constitutes the prime conditioning element for the achievement of dramatic increases in economic growth through the combined influences of technical change and specialization. Marx, with his usual eloquence, puts the historical importance of this relationship in a somewhat more erudite fashion:

"As inventions increased in number, and the demand for the newly discovered machines grew larger, the machine-making industry split up, more and more, into numerous developed branches, and division of labour in these manufactures was more and more developed. Here, then, we see in manufacture the immediate technical foundation of modern industry. Manufacture produced the machinery, by means of which modern industry abolished the handicrafts and manufacturing systems in those spheres of production that it first seized upon". (Marx, 1906, p. 417).

Ever since modern industry "rent the veil that concealed from men their own social process of production" (Marx, p. 564) it has been a major goal of industrializing nations during the ensuing epochs of World development to acquire the mechanical techniques and skills necessary for the manufacture of producer equipment. But what is it about capital goods capacity that makes it such an attractive and compulsive objective in many of the industrializing states, and an essential ingredient in the initial development-push of others? What is it, furthermore, that drives relatively poor nations to invest in manufacturing capacity of high resource cost engineering items even when foreknowledge exists that locally produced equipment will cost more during the period of industrial infancy, an infancy that often-times takes on a Peter Pan-type characterization, than if the equivalent goods were purchased outright from already established producers abroad? Clearly, the rationale which provides the impulse for industrializing nations to strive for capability in capital goods production rises above any relationship between the sector's incipient growth pains and its efficiency level. Early writings on the subject failed, however, to grasp this point. Pack and Todaro (1969, p. 400) writing on the subject of technological transfer and economic development, as far back as the late 1960s, argued the case for developing countries to institute measures to encourage the growth of domestic capital goods industries but with one caveat, and that was that unit capital costs of production should be no higher than those of the advanced countries from which the displaced imports originate. Their qualification is essentially the opportunity-cost one of seeking to maximize the allocation of scarce investible resources in an under-developed economy. That the quest for efficiency, especially in the capital goods sector which is organic to the generation of efficiency in other mechanical industries, be given the economic reverence that is its rightful due requires no justification. But the pervasiveness of infant industry arguments has had the effect of neutralizing the incisiveness of the role of economic efficiency in

development, replacing it to a great extent with a plethora of other non-price based considerations².

These additional influences which militate for the establishment of capital goods capacity in developing countries, whilst not denying the fundamental primacy of efficiency in production, are increasingly recognized and indeed justified as being goals in their own right. The rationale for fostering an indigenous machinery manufacturing industry can be classified under a number of broad macro-economic headings, namely: faster economic growth; the promotion of externalities; the widening of technological choice; and the ability to secure the benefits of foreign trade. It will be the purpose of the discourse that follows to offer adumbration of the various issues associated with each of these.

III. The Rationale of Capital Goods Production

(i) Growth Characteristics

The notion that the machinery producing group of industries is a "leading sector" in the process of industrialization now seems to be generally established. The basis for this view is that the sector has shown a tendency to grow faster than industry as a whole. Examples abound. During the initial Five-Year Plan of the Soviet Union the investment emphasis was on heavy industry and machine fabrication in particular. The annual average growth rate for Soviet heavy industry between 1928-29 and 1937 was 17.8 per cent, with the machinery industry registering 18.9 per cent³. For India, over the period 1951 to 1967, the growth rate of the machine building industry was 15.6 per cent⁴. The growth of machinery output in Communist China during the period 1952-1966 was also high, amounting to 18.6 per cent⁵. The expansion of Japan's heavy and chemical industries in the post-war era proved similarly remarkable. Over the same time-span, 1952-66, the growth of machine building activity reached 15.1 per cent per annum⁶. The branches' index of production (1965=100) rose from 14.6 in 1955 to 291.6 in 1970, an increase of more than twenty times over the fifteen years. As a result, the share of the heavy and chemical industries in the total output of manufacturing industry reached 57 per cent in 1970, higher than the corresponding share in West Germany or the United States⁷. Similar trends were registered in India, where the share of machine building output rose from 4.5 per cent in 1946 to 23 per cent in 1974⁸; Brazil, where the sector's share in industrial value-added rose from 15 to 27 per cent between 1949 and 1959⁹; in Communist China where, over roughly the same

period, the machine building industry's share in total industrial output grew from 2-7 per cent to 12 per cent¹⁰; and, finally, in the case of Korea, where the share of mechanical engineering products in all manufacturing products increased from 5.2 per cent in 1960 to 10.4 per cent in 1970¹¹.

The rapid structural transformation of economies induced by the growth and development of their capital goods sectors lends credence to Rostow's assertion that engineering goods capacity is a leading force in propelling a country forward in its drive for economic and technological maturity¹². Hoffman, (1958) in a major treatise, put forward a comparative framework for measuring the growth performance of capital goods production between industrializing nations. In an attempt to trace how the pattern of manufacturing output in developing countries is affected by the emergence and growth of a capital goods sectors. According to Hoffman, in the first stage of industrialization, net output of consumer goods industries is on the average five times that of capital goods. In the second stage, the ratio is reduced to about 2.5 to 1, while in the third stage the net output of these two groups is approximately equal. Although Hoffman's analysis is primarily concerned with capitalist countries, he interestingly had this to say on the Soviet Union:

"The Soviet Union is, of course, the most striking example of a country which has deliberately fostered the production of capital goods industries by state action. During the first three Five- Year Plans (1928-42) investment in capital goods industries were between 84 and 86 per cent of all capital investments in industry (excluding repairs to existing capital equipment). In 1937 and 1940 the gross output of capital goods was already about equal to the gross output of consumer goods. The relationship between the net output may have been similar" (p. 100).

India was the first developing country to emulate the Soviet Union's two-sector growth strategy; and ignoring the allocation of investment resources in the First Five-Year Plan, where priority was given to the development of agriculture and the social and economic infrastructure, it has been quoted (Bhagwati, 1970, p. 8) that as a proportion of planned expenditures in industry 70 per cent were devoted to the metal, machinery and chemical industries during the Second Plan and 80 per cent during the Third Plan¹³. Thus, by 1968 India's ratio of consumers goods to investment goods in terms of gross value-added was in the order of 1.8:1¹⁴. To progress from the first

to the third of Hoffman's stages normally took several decades in most industrial countries. The Soviet Union, however, in just one decade had reached the third stage whilst India over a slightly longer period had only just failed to achieve the same¹⁵. The development experience of the Soviet Union and India gives substance to the Hirschman-Gerschenkron hypothesis¹⁶ that contemporary industrializing countries can work their way from "last back to basic and intermediary industries"; a process that completely reverses the traditional path of industrialization which initially relies on the development of consumer goods industries¹⁷.

(ii) Externalities

The writings of Hirschman (1958) also introduced to development economists the strategy of unbalanced growth with its associated concept of "linkage", both of which have direct relevance to the character of industrialization in the Third World. Since the doctrine focuses on the structural and dynamic forces at work in an economy rather than solely the enlargement of overall capacity, a further justification for emphasizing the development of producer goods industries can be advanced in terms of the dynamic externalities involved in the manufacture of machinery.

A major feature of the unbalanced growth strategy is the concentration of investment into those industries most conducive to transforming the economy to a higher stage. Hirschman maintains that this is preferable to dissipating scarce investment funds by attempting to advance on all fronts at the same time: "to be breathlessly climbing a peak in a mountain range is considered more important than standing poised on the crest of a ridge in the foothills". (Wilber, 1969, p. 86) Planning in the Soviet Union provides a historical example of this approach. The country pursued a "shock" strategy of bottlenecks successively created and resolved¹⁸ a policy which has been described as "planning by campaigning"¹⁹. The Soviets directed large chunks of their total investment to certain industries designated as having key status by the authorities. This policy caused severe shortages and stresses within the economy which, as a consequence, created fresh bottlenecks and therefore new targets for the Soviet planners.

The level of interdependence between various industries is an important indicator as to the appropriateness of any particular "campaign". Thus, external economies would be gained by a country if it invests in those industries exhibiting high linkage effects. Hirschman documented two types of linkage: the input provision or

backward linkage effects, and the output utilization or forward linkage effects²⁰. From a development perspective, it is backward linkages which have the greater stimulative effects. The advantage of an industry with high backward linkages relates to the part it plays as an inducement mechanism to the development of a feeder network of ancillary industries. If the expansion of a particular industry leads to a general increase in economic activity embracing a considerable number of basic and supplier industries then it must be classified as a key industry meriting a high priority in development. Under this criterion, the machinery branch can clearly be interpreted as a key sector. The strong backward linkage effects of the machine building industry stem from the fact that it has a high ratio of purchased inputs to the value of its total production²¹.

One of the most significant effects that a growing network of linkages has on an industrializing economy is the increased intensity and diversity of the labour skills thus generated. There are various externalities associated with technological application but amongst the most important is the impact skill acquisition has on industrial advancement. In the case of the metal-working sector learning is acquired by doing and is, therefore, a cumulative function of the historical evolution and development of engineering practice. The origins of machine-making in developing countries are normally to be found in the informal artisanal workshops where all manner of repair, fabrication and modification are undertaken in extremely primitive conditions. Although the "marginalized" craftsmen possess only the most rudimentary of technical facilities their adroitness in mechanical undertaking acquired through years of accumulated experience in problem-solving situations, has enabled them to expand their activities into machinery manufacture proper. This occurred, for instance, in Ludhiana in India's Punjab region where families originally involved in repair work now specialize in the manufacture of basic machine tools against order, often constructing them literally in their backyards. Similar examples of repair shops expanding into machinery production have been quoted for Latin America²². Even if such a pattern is unlikely to lead today to the establishment of the extremely large machinery plants that are to be found in the advanced nations the continued contact with engineering design and organizational problems nevertheless inculcates the workforce with an expanding and deepening mechanical expertise. Moreover, as production increases and the degree of specialization is enhanced there is the possibility of profound improvements in worker productivity. This has come to be known as the "learning-curve" phenomenon²³. Such cost-reductions have been held to emerge especially in those areas

of manufacturing activity which involve repetitiveness and continuity in the work programme²⁴.

A company that is able to effect reductions in production costs through movement down its workers' learning curve may also be in a position to secure further increases in efficiency from the introduction of allied improvements in the organization of production. As with the learning curve concept, a fairly high level of demand and continuity of production are necessary; but these are conditions rarely to be found in the developing world where levels of demand tend to be insufficient to sustain either flow-line or series production. Even though one-off and batch manufacture continue to be the prime methods of production in such countries, there may still be opportunities (primarily in batch production where the quantities are not insubstantial) for amelioration in the organization of production. There is, for instance, the possibility for improvements in materials handling. It might also be feasible to change the lay-out of process machinery to accommodate a more ordered pattern of production so that the parts of the product advance in a logical fashion through the various stages of machining to fabrication. Moreover, the introduction of modular design, where common parts for different machine products can be identified, will help to lengthen production runs and thus increase the efficiency gains from the improved lay-out of the plant.

The discussion thus far has concentrated on the positive influences that linkages, skill-enhancement and organizational improvement can make on the operating efficiency of the capital goods sector. As a source of capital-saving in the machinery-using industries these factors are clearly of some importance. However, there is a further source of capital-saving, having regard to reducing the capital content of the machinery product in an attempt to make it more appropriate to the factor endowments of given developing countries. The possession of the ability to influence the design of machinery represents a further consideration singling out domestic capital goods capacity as a crucial strategic factor in the technological development of newly industrializing countries.

(iii) Choice of technology

The promotion of a machinery production capability has now become a sine qua non for those Third World countries intent on securing non-dependent technological development. To a very great extent the significance of the acquisition of indigenous machinery manufacturing facilities and competence bears directly on economic

considerations surrounding the appropriateness of technology. Most importantly, it allows local equipment producers to specialize in the manufacture of processes which aim at maximising the labour input of technology application whilst, at the same time, minimizing the loss in the degree of output achieved²⁵. The mainspring to this approach is the view that acknowledges the existence of a fairly large pool of unemployment in many of the poorer countries and attempts to utilize the comparative inexpensiveness of this labour as a means of generating steady but sustained economic growth.

Although the appropriateness of technology in relation to the factor proportions of given developing economies has for long been advanced by development economists²⁶ its economic feasibility in terms of Third World nations willingly avoiding modern techniques simply does not square with the practical realities of these countries' aspirations; it also, at the same time, smacks of attempts, especially if sponsored by Western dominated international agencies, at encouraging the continuation of Third World technological serfdom. Even though such arguments give pragmatic rein to wide scale endorsement of implementing labour-intensive techniques in labour-surplus states there is nevertheless a growing consensus, even amongst the policy-makers within the peripheral countries, that the solution to the problem of unemployment will not be found merely by augmenting the size of production potential through importation of foreign technology²⁷. The phenomenon of increasing unemployment occurring coincidentally with an expansion in industrial capacity has led to the realization that the promotion of manufacturing activities is not only a question of the scale of operation but also of the nature of the technology adopted for the purpose, with its consequential impact on the volume of employment²⁸.

Efforts to orient machinery production in labour abundant countries around appropriate, labour-intensive technology is clearly of considerable importance when it is noted that the majority of world technology exports today consist of "State of Art", capital-using equipment from advanced countries. Circumstances will arise, of course, where imported capital-intensive technology with its attribute of enhanced accuracy will need to be given priority in the establishment of selected manufacturing activities, but the creation and level of this capacity will need to be determined in the light of such considerations as the nature of the industry; the quality of output; the effective demand for the products; and the cost structure of comparative productive operations. Notwithstanding this, however, once a machinery producing base has been constructed, particular emphasis can

then be given to the design and production of techniques most appropriate to the economic conditions prevailing within the economy of a developing country. Thus a machinery producing sector offers the host country greater latitude in the choice of technology available.

The concept of "appropriateness" has evolved to encompass two different though related variants of the sense in which it is perceived.

The first view of appropriateness is one that holds direct relation to the "quality" of the technology that is available for use in labour-rich economies. Clearly, if the choice of technology is constricted to the output of the dominant capital goods sectors located in the advanced countries the opportunity to select lower quality machinery will be severely limited. Lower quality in the sense used here conforms to the principle of cost-minimization: avoiding the sophistication of the high cost, high technology of the West and instead concentrating on the appropriate aspects of simplicity and durability. The suitability of such machinery for the non-industrialized countries hinges on the belief that they harbour higher elasticities of demand for given technologies relative to those exhibited in the developed countries for the corresponding class of product. The search for appropriateness has led a number of celebrated economists to hedge towards the notion of encouraging a market for second-hand machines which, for a variety of reasons, are now obsolete in the countries where they originated²⁹. Numerous ideas in this context have been mooted, ranging from the supply of specifically 15-20 year vintage models³⁰, thus explicitly de-emphasizing the sponsorship of primitive forms of equipment, to custom-built technology primarily intended for use in Third World environments³¹.

The second nuance on the meaning of technological appropriateness argues that the only truly relevant forms of mechanical technique are those that emerge, whether copied, adapted or modified from existing designs, from within the developing world itself, being a response to the economic conditions operating in the host environment³². This view obviously depends on the existence of an albeit rudimentary, domestic capital goods sector to produce the equipment required. The capability to build machinery is clearly a central feature in the supply of appropriate technology, but it is also fundamental to the emergence of appropriate innovation. The development of such a sector will tend to be a pre-requisite for the introduction of capital saving, labour-intensive technologies which address the immediate problem of efficiently allocating scarce economic resources. The application of

technology will also be appropriate from the process angle in that capital investment in the mechanical industries of developing countries will tend to fall within the parameters of standard, general purpose machinery redolent of the equipment employed in the small engineering workshops of western companies in the earlier part of this century. The significance of this technology is that it is primarily a man-to-machine mode of operation, emphasizing the artisanal abilities of the operator. Capital goods production along these lines would thus not only help to absorb the putatively prevalent pools of untapped skilled labour that exist in the developing world³³, but would also provide a potential reservoir of innovative talent that will serve the other sectors of engineering activity either directly through its mobility or indirectly through the cross-fertilization of efficiency of the innovation embodied in the techniques diffused.

(iv) Foreign Trade

The final facet of this discussion justifying the development of capital goods capacity used to be rationalized in terms of foreign exchange savings; this emphasis has shifted over recent times to focus on the more positive aspect of foreign exchange "earnings". However, it is the former consideration which occupies the minds of policy makers when initially instituting import-substitution measures for capital goods development. Countries at the threshold of industrialization are desperately keen to conserve foreign exchange resources to ensure that imports of essential materials are continuously available to fuel the industrialization-push. Thus without foreign exchange an economy is effectively "closed" to imports. In such circumstances a country without well developed metal, machinery and subsidiary industries is unable to produce a sizable quantity of capital goods and thus invest a high fraction of its income however high its potential saving propensity may be³⁴. Both the Indian (Mahalanobis) and the Soviet (Fel'dman) two sector growth models operated under the assumption of a closed economy³⁵. But clearly the closed economy assumption is unrealistic as in the early stages of Indian and Soviet development significant amounts of capital-goods were, in fact, imported. The problem can be resolved, however, if instead of closed economy is read foreign exchange constraint. The models now take on a greater element of reality: in an "open" economy, an upper limit to possible investment is imposed not by domestic investment capacity but by that capacity plus foreign exchange available to buy investment goods from abroad. Assuming zero local investment goods capacity, then foreign exchange availability provides the upper constraint on possible investment³⁶. The case for the development of local

machine-making capacity may thus be supported on the grounds that foreign exchange to an industrializing country is a scarce resource and, once past the import-substitution phase, its use can be economized through substantial reductions in the importation of machinery.

It has been the normal strategic ploy of developing countries which have constructed the industrial base of their economies through import-substitution policies to then turn to the export market. This reorientation of development strategy is an inevitable and necessary action for most newly industrializing states and is typically the result of the initial import-substituting spurt of demand petering out on the conclusion of all easily exploitable investment avenues. Of course, such a process eventually affects all industrial sectors, and those involved in the production of capital goods provide no exception. A primary rationale for attempts by machinery manufacturers to enter export markets stems from their efforts to increase the length of production runs depressed by the local economy's low demand for durable equipment; being both a cause and effect of the high price structure of locally produced capital goods. Through the promotion of exports there will be the potential for the emergence of a "virtuous economic circle": the initial raising of demand stimulates production and the consequent rise in the scale and efficiency of manufacturing operations lead to falls in unit costs, with the possibility of further increases in demand. The fairly recent growth in the technology exports of developing countries is something novel to world trading patterns, but it is nevertheless a phenomenon that is being closely monitored by development analysts for clues to the determination of an evolving comparative advantage³⁷.

Although the dynamic attributes of technology exports have not been widely articulated in the development literature most informed commentators would subscribe to the view that export activity leads to an enlargement of technological capability. There would appear to be two main reasons for this. First and foremost is the idea that the exposure of previously sheltered firms to a more aggressive commercial environment engenders a spirit of competitiveness. This relates not only to the need to reduce price levels to internationally competitive levels but also to the pressures for improvement in design. The necessity of instituting design changes has regard to the second of the positive influences promoting the precocious development of technological capability: machinery exports have a tendency to induce technological feedback. This phenomenon has been observed by Westphal (et.al. 1984) in the case of Korean machinery exports whereby the foreign customers were instrumental in imposing their

will on product design and quality control. They have also contributed to greater productivity and lower costs by suggesting changes in production processes and improvements in management techniques and production organization - all at no cost to the Korean firms³⁸. It is this feature of capital goods exports that facilitates an acceleration and expansion of technological competence; it may well also, at the same time, lead to its deepening³⁹.

It appears, furthermore, that the scope for promoting Third World machinery exports may well be greater than for traditional exports of consumer goods and primary products. The increasingly electrical and electronic content of the consumer good exports of the newly industrializing nations have tended to attract import restrictions in the major markets of the industrialized regions. The international recession has hastened the imposition of these import controls by exacerbating the sense of nervousness already felt by western nations prior to the recession's onset and caused by the declining share of the domestic market served by local industry. Moreover, the other major traditional export of the development countries, raw materials, provides little in the way of incentive with world commodity prices being their lowest for years. Such a scenario, coupled with the fact that mechanical engineering goods are neither subject to excessive trade restrictions nor represent a potential threat, through their high labour skill embodiment, to the employment of unskilled labour in the advanced countries suggests that the contemporary international arena is conducive to the expansion of Third World machinery exports even at a time when total demand is contracting⁴⁰.

The empirical evidence substantiates this sanguine appraisal of the developing countries' trading prospects in machinery. Table 1 marshals together the data on world trade in machinery, since 1970, by broad economic region. The immediate impression obtained from analysis of the statistics is the encouraging manner in which the share of developing country exports in world trade has increased from 1.6 per cent in 1970 to 6.3 in 1982. The comparative figures for the developed countries show a fall from 87.6 per cent to 84.6 over the same period, registering a negative growth in their trade of 0.3 per cent.

That the poorer countries are becoming increasingly involved in industrialization and in the promotion of technological activity is indicated by the rising trend of machinery shipped to the Third World; the region attracting a 30.9 per cent share of world exports in 1982 compared to a base share of 21.5. Thus, the evidence indicates

Table 1: World Trade in machinery and transport equipment (SITC, revised, 7) - Values (in millions of \$US, F.O.B.) and shares (%)

Year	REGIONS OF DESTINATION						REGIONS OF DESTINATION					
	World Trade	Developed Market Economies	Developing Market Economies	Centrally Planned Economies	Region In world trade	Total trade	Developed Market Economies	Developing Market Economies	Centrally Planned Economies	Region In world trade	Total trade	
Regions of Origin												
World Trade												
1970	89,769	59,445	19,279	10,360	100.0	100.0	66.2	21.5	11.5	100.0	100.0	
1979	439,831	270,764	119,185	48,871	100.0	100.0	61.6	27.1	10.9	100.0	100.0	
1980	510,934	308,282	147,860	52,527	100.0	100.0	60.3	28.9	10.3	100.0	100.0	
1981	522,550	304,550	165,778	49,384	100.0	100.0	58.3	31.7	9.5	100.0	100.0	
1982	509,002	298,263	157,447	49,240	100.0	100.0	58.6	30.9	9.7	100.0	100.0	
Developed Market Economies												
1970	78,623	58,057	17,107	2,801	87.6	100.0	73.8	21.8	3.6	100.0	100.0	
1979	376,759	255,815	103,982	15,685	85.7	100.0	67.9	27.6	4.1	100.0	100.0	
1980	437,014	290,732	127,913	16,935	85.5	100.0	66.5	29.3	3.9	100.0	100.0	
1981	445,620	284,712	143,504	15,060	85.3	100.0	63.9	32.2	3.4	100.0	100.0	
1982	430,460	277,249	135,539	14,138	84.6	100.0	64.4	31.5	3.3	100.0	100.0	
Developing Market Economies												
1970	1,431	757	633	20	1.6	100.0	52.9	44.2	1.4	100.0	100.0	
1979	20,684	11,282	9,036	222	4.7	100.0	54.5	43.7	1.1	100.0	100.0	
1980	27,239	13,898	12,595	573	5.3	100.0	51.0	46.2	2.1	100.0	100.0	
1981	31,628	16,052	14,600	687	6.1	100.0	50.8	46.2	2.2	100.0	100.0	
1982	32,136	17,442	13,570	617	6.3	100.0	54.3	42.2	1.9	100.0	100.0	
Developing Africa*												
1970	61	24	32	4	0.1	100.0	39.3	52.5	6.6	100.0	100.0	
1979	269	149	107	0	0.1	100.0	55.4	39.8	0.0	100.0	100.0	
1980	362	231	129	1	0.1	100.0	63.8	63.8	0.3	100.0	100.0	
1981	312	140	158	2	0.1	100.0	44.9	50.6	0.6	100.0	100.0	
1982	315	171	142	1	0.1	100.0	54.3	45.1	0.3	100.0	100.0	

Source: UN Monthly Bulletin of Statistics, Special Table D, Vol. 38, No. 5 (May 1984)
* excluding the exports of Zimbabwe.

that the Third World is not only emerging as a potential force in the World trade of technology but is also providing a growing proportion of the market for capital goods exports. Table 2 provides a closer examination of these trends and the results are revealing. Even though the share of the Third World's exports to both itself and the developed nations have remained fairly static over the period (see Table 1) its share in the total World trade to these two regions has increased remarkably. The proportion of developing country exports amongst all exports to countries of the Third World increased from 3.2 per cent in 1970 to 8.6 in 1982, recording an annual growth rate of over 8 per cent. Moreover, the newly industrializing countries' share of World exports to the developed world over the same time span rose from 1.3 per cent to 5.8, representing a 13.3 per cent rate of growth. The recession and the pursuit of de-industrialization policies in the West, has by comparison, led to declines in the share of advanced country machinery exports, relative to World exports, to both the developed and developing market economies.

Table 2: Performance of Machinery Exports by Region (1970-82)

Exports to Exports from	Developing countries		Developed Countries	
	Value	Share growth	Value	Share growth
	(\$US mill.)	(%) (AAG%)	(\$US Mill)	(%) (AAG%)
LDCs				
1970	633 (19,279)	3.2) 8.6	757 (59,445)	1.3) 13.3
1982	13,570 (157,447)	8.6)	17,442 (298,263)	5.8)
DMEs				
1970	17,107 (19,279)	88.7) -0.2	58,057 (59,445)	97.7)
1982	135,539 (157,447)	86.1)	277,249 (298,263)	93.0) -0.4

Source: Table 1.

Note: figures in parenthesis relate to the total value of particular regions in World trade.

The capture of technology export markets has been, and continues to be, a painful exercise for the newly industrializing countries. The building up of an international marketing network and the continual struggle to overcome ingrained prejudices in terms of established trademarks and reputations have proved formidable barriers⁴¹. Given all these obstacles it is nevertheless evident from the above analysis

that substantial progress has been achieved. Two qualifications to this basically rosy assessment should, however, be noted. Firstly, caution needs to be exercised in the interpretation of the fairly significant growth of incursion into foreign markets that has been sustained by the developing economies. This "rapid" rate of growth represents a statistical illusion in that measurement is based on the extremely small export base prevailing. Secondly, the broad-brush treatment of classifying the Third World as one entity hides the fact that within such an area the technology export performance of particular countries varies widely. The newly industrializing states of Korea and Taiwan, for example, have made impressive progress in this respect. The countries of sub-Saharan Africa, by comparison, as Table 1 illustrates, have yet to enter the mechanical engineering stage of industrialization and this is reflected in their minuscule 0.1 per cent share of World trade in machinery; they seem, with one or two exceptions, "locked" into a pre-industrial milieu of technological activity.

IV. Africa's Technological Development

(i) The Problem

The paradox of African economic development is that policies aimed towards industrializing the countries of the Continent, and thus reducing their over-reliance on agriculture, have ultimately depended on the foreign-exchange earnings of cash crops. Although this is a major problem, it is not the only one. Market constraints such as low levels of capital accumulation, demand and hence capacity-underutilization are also important influences contributing to black Africa's doleful industrial performance.

In an attempt to rise above these difficulties, Africa's policy-makers in 1980 expressed their industrial ambitions within the framework of what came to be known as the Monrovia Strategy (after the country where it was formulated): a central theme of this Pan African approach to the ideal of integrated continental development being the promotion of capital goods production capabilities for the development of genuinely African technology⁴². Champions of such inward-directed development efforts were the experts of the international development agencies who had for long proclaimed the benefits of poorer countries employing "appropriate technology".

The effects of the Sub-Saharan droughts several years into the current decade dramatically altered the spotlight of policy, as formulated both within and without the Continent. The thrust of

developmental efforts swung firmly back in favour of agriculture. Although this shift in emphasis was dramatic it ought not to be considered final. The basis for this view is two-pronged. Firstly, efforts to improve agricultural productivity, in both farming and processing, are very much dependent on the input of machinery and for the reasons stated hitherto, it ought to be locally produced machinery. Secondly, if it is accepted that in the foreseeable future agricultural output will continue to be subject to climatic factors, then self-sustained economic development will clearly only come about through industrialization. Sooner, or later, therefore, policies relating to the fostering of indigenous technological capacity must return to the centre-stage of policy debate.

(ii) Strategic Options

The Monrovia Strategy was perhaps Africa's first collective recognition of the need to ease its reliance on the export of cash crops as the mainstay of the Sub-Saharan economies⁴³ through the development of domestic technological capabilities. Given the right "climate" most informed observers would agree to the correctness of this approach; the debate arises rather on the suitable strategies to be followed in achieving such an objective. Essentially, the OAU's policy was one of encouraging the endogenous growth of machine-making activities, whilst, at the same time, "de-linking" from the technology supplying industries of the advanced states. Although the ability to achieve the latter aim is problematical, and in any case dependent on the success of the former, the proposal nevertheless reflected a sense of considerable awareness and foresight of the problems the Continent faces, and will continue to face. Of major significance in this respect was the recognition that none of the existing strategies of technological development are applicable to African economic conditions.

The Western model is clearly inappropriate⁴⁴. It is an evolutionary approach to industrial and technological development that emphasizes capital-using innovation, and, most importantly, a competitive commercial environment. The Soviet paradigm of the 1980s, by contrast, has much to commend itself to the capital-scarce African countries. The machinery producing sector was regarded as a key industry and therefore given priority in the allocation of investment funds: it was seen as the engine of growth, with capital-saving the cornerstone to the strategy. This is evidenced by the way research and development expenditure did not emphasize major design changes in the product leading to the premature replacement of

still productive equipment. The little innovation that did take place was instead geared to making the copied Western equipment of standard, general-purpose design, more amenable to long-production runs. The choice of machine model was narrow and restricted to the basic. Thus, through the achievement of economies of scale, standardization and specialization, the Soviets sustained capital-saving not only in the technical nature of the final product but also in the manner by which it was produced.

For Africa, the problem with this model is that it requires a very large level of demand to make it work. In the contemporary history of industrial development the promotion of a viable capital goods sector has never occurred in countries possessing less than 20 millions in populations; this is normal, however, for the average African country⁴⁵. Finally, the technology development models of Japan, Korea and Taiwan feature a variety of common characteristics separating them from the experiences of their industrialising predecessors. Even though the Far-Eastern strategy was of the same style as Soviet efforts several decades earlier, there was one major difference: although these South-East Asian countries concentrated on the efficiency-inducing attributes of scale, standardisation and specialisation in the production of labour-intensive products, their output was destined for overseas markets rather than domestic ones. Here again, however, a problem exists for Africa to emulate this Far-Eastern approach. Certainly Japan, but also Korea and Taiwan, are all countries possessing a fairly long history of mechanical expertise, and albeit it was of a lower order compared to the industrially advanced nations, a sufficient standard of quality was nevertheless achieved. No such expertise exists in the Sub-Saharan countries of Africa, where even basic technological proficiency has, until quite recently, been conspicuously absent.

(iii) An African Paradigm?

In a rather belaboured and circuitous manner the discussion has come some way to revealing the sense of the Monrovia Strategy. In a world of declining export opportunity for even the established technology-producing countries, what hope is there for the fledgling capital-goods industries of Africa? Their products will be lacking quality, reputation, trade-marks, back-up services and marketing networks. Comparatively, they will also probably be high-cost and too backward in design for most other countries, even the newly industrializing ones.

The implication which stems from the foregoing discussion

suggests that perhaps the only fruitful strategy for states possessing low levels of capital and effective demand, combined with poor (trans-continental) export prospects for industrial products should, out of necessity, be one of more modest design. Its primary rationale being to foster a technological platform comprized of rural as well as urban machinery manufacturing undertakings concerned with the fabrication of basic agricultural and industrial equipment. This "Third-Way"⁴⁶ represents an approach seeking alternative, more applicable origins for the initiation of indigenous technological advancement - addressing itself to the production and adaption of mechanical techniques to meet the needs of agriculture and local industry.

A technology strategy peculiar to Africa it would not be, but suitable to its needs certainly. China did in fact pursue such a "gradualist" approach to the development of its economy during the 1950s and 1960s. Of relevance here has been the dualistic character of China's development push: "taking agriculture as the foundation and industry as the leading sector"⁴⁷. Although, unlike African economies, China has been large enough to avoid reliance on the export of cash crops, the necessity of raising productivity in the agricultural sector has always been viewed as a priority by the authorities. The promotion of the mechanical engineering sector therefore became of strategic importance in increasing the mechanization of farming. The present status of Africa's machinery-producing sector presages little in the way of optimism that it will provide the take-off for the sort of technological development to occur as has happened in this early period of Chinese industrialization; but it should nevertheless be remembered that similar views were expressed about Korean, Taiwanese and, indeed, Communist China's prospects only some three decades ago.

Notes

* Economics and Financial Management Group - Granfield Institute of Technology.

1. This study was undertaken while the author was a Research Associate at the Institute for Development Studies, University of Nairobi, thanks to financial assistance provided by the World Bank under an award from the Robert S. McNamara Research Fellowship Programme.

2. Bruton (1979), asserts forcefully that the countries of the developing world should as a matter of policy encourage the establishment of indigenous machine building capacity. However, he also admits that "...Few formulations of the conventional, static comparative advantage argument would lead to a conclusion that a developing country should build its

own capital goods industries". (p. 47).

3. See, Matthews (1981, p. 34).

4. See, Cheng (1972, p. 228). Over the period 1961 to 1972, the growth of India's machinery sector was approximately 50 per cent higher, at 9 per cent per annum, than that for all other industry (Matthews, 1981, p. 31).

5. *Ibid.* In unison with the experience of India, during 1952-66 the growth of machinery output was 50 per cent higher than that of total output (Cheng, 1972, p. 231).

6. *Ibid.*

7. See, Okita (1980, p. 129).

8. Data drawn from United Nations Statistics in National Accounts (1976) and Table 3.1 in (Bhagwati, 1970).

9. See, Leff (1968, p. 2).

10. See, Cheng (1972, p. 228).

11. See, Rhee (1973, p.3 fn.)

12. Rostow identifies some of the "leading" industries since the industrial revolution, thus, ..." after the railway take-offs of the third quarter of the nineteenth century - with coal, iron and heavy engineering at the centre of the growth process - it is steel, the new ships, chemicals, electricity and the products of the modern machine tool that came to dominate the economy and sustain the overall rate of growth". (1959, p. 8).

13. See, Bhagwati (1970, p. 85).

14. *Ibid.*, (p. 106). The ratio applies only to value-added from the "organized" industrial sector.

15. It is interesting to note that China appears to have also passed through all Hoffman's stages in a decade. See (Maizels, 1963, p. 50).

16. See, (Hirschman, 1958, p. 111) and (Gerschenkron, 1952, pp. 7-8).

17. See, (Cheng, 1972, p. 232).

18. See, (Wilber 1969, p. 87).

19. For a fuller discussion, see (Nove, 1961, pp. 288-95).
20. "Backward linkage effect" indicates that every non-primary economic activity will induce attempts to supply through domestic production the inputs needed in the activity. Forward linkage effect" indicates that every activity that does not by its nature cater exclusively to final demand will induce attempts to utilize its outputs in some new activities. See, (Hirschman, 1958, chap. 6).
21. On this point Cheng (1972, p. 195) has this to say on the development of supplier industries of Communist China's machine- building industry ..."The backward linkage impact on input industries such as iron and steel, non-ferrous metals, rubber, glass, and plastics is fairly great. Of the total production costs in machine-building, about 60 per cent are for intermediate materials - 56 per cent for metals alone".
22. Cortes (1978, pp.13-14) in describing the development of the Argentinian machine tool industry states that it ..."evolved from the repair activities of small workshops or at the initiative of individual machine operators and metal workers, many of whom had been trained in army workshop, or on the railways. In addition, a substantial proportion of the workers were Italian immigrants who had had previous training in metal working in their home country. The machines produced in the initial stages were simple lathes, grinders, presses, boring and drilling machines, copied from imported machines. Production was evidently artisanal, based on the technical ability of the firms' owners to copy the machines with which they were familiar. The production technology was very simple, in many cases using machines produced by the firms themselves. Amsden (1977, p. 220) in tracing the early development of Taiwan's machine tool industry similarly noted that ..."the earliest machine tool shops evolved to provide repair and reconditioning services to small local firms. Later such activity was superseded by the manufacture of complete units of lathes, drill presses and punching machines".
23. See, for instance, Arrow (1962, pp. 155-73); and Hirsch (1952 and 1956).
24. See, Alchian A. (1963, pp. 679-93).
25. The following statement by Pack and Todaro (1969, p. 397) is fairly typical in this respect ..."Let us state explicitly that the establishment of this ...(machine-producing)... industry is not put forth as a solution to the employment problem at the cost of decreasing the rate of growth of output through the adoption of inefficient techniques. Rather, it is proposed on the assumption that both output and employment growth can be accelerated. Specifically, we would argue that the LDCs should produce their own machinery, copying initially the earlier more labour-intensive designs of the western countries. This would provide the possibility of eliminating much of the conflict between output and employment growth while avoiding the important difficulty of designing new labour-using machinery. By duplicating earlier western equipment they would derive the benefit of controlling both the direction and speed of technical change in their own countries".
26. E. F. Schumacher published his celebrated work; Small is Beautiful, as long ago as the early 1970s.
27. The importance that African nations, through the "Lagos Plan of Action", have given to

the promotion of local capital goods capacity is superficially indicated by the fact that science and technology is the largest section in the Plan. (Atul Wad, 1984, p. 327 fn.).

28. Of course, inappropriate technology cannot solely be blamed for the problem of unemployment in the developing world. Kenya, for instance, has managed to sustain relatively high average growth rates in GDP of 5.9 per cent between 1960-70, and 5.8 per cent between 1970-82. Moreover, since independence in 1963, the country has consistently achieved per capita economic growth of around 3 per cent per annum. Recently, however, this growth pattern began to change. Things started to go awry around the beginning of the present decade. It was perhaps inevitable that with the import-substitution engine running out of steam the uncontrolled population expansion of about 4 per cent per annum, currently the world's highest, would begin to seriously bite into Kenya's economic growth. In 1980-81 the increase in per capita GDP was only 1.4 per cent. In 1981-82 there was a negative 0.4 per cent increase, followed in 1982-83 by a meagre 0.1 per cent rate of growth. (World Bank, 1984, pp. 207-73). In addition, there exists a genuine concern that the situation could further deteriorate. The basis for this anxiety has regard to the quite alarming rates of population increase that are projected: it has been forecast that from now to the end of the century Kenya's population will increase at an average annual rate of 4.4 per cent, pushing the population total from the present 19 millions to around 40 millions. (World Bank, 1984, *Ibid.*). This level of population increase has already begun to squeeze employment opportunity. The annual growth in wage employment averaged only 36,300 during the Fourth Plan Period (1979-83) (Economic Survey, 1984, p. 45). Commenting on this degree of labour absorption a government publication stated that it would not be easy to sustain that rate of job creation (Economic Survey, 1984, p. 45). With the population having increased by some three quarters of a million in 1983 alone, it is difficult to conceive the official view that the residue of job seekers will be absorbed outside the formal sector in the rural economy and in urban informal activities. It is indicative that "jobs" in the urban informal sector are increasing but at a decreasing rate: in 1982-83 the growth in employment represented 6.2 per cent which was considerably less than the 10 per cent achieved over the previous five year period (Economic Survey, 1984, p. 47).

29. See, Cooper and Kaplinsky, 1975.

30. See, Pack, 1980 - also in the World Development publication vol. 9, N°3 (1981, p. 229) of the revised paper.

31. The Intermediate Technology Group, situated in London, is primarily concerned with developing this form of technology.

32. See, for instance, (Cooper, 1980), (Bhalla, 1981, pp. 370- 80), (Burton, 1979) and (Mkandawire, 1981).

33. For an extended discussion on this issue, see, (Cooper, 1980, pp. 6-15).

34. Domar, 1972, p. 236.

35. See (Mahalanobis, 1953) on India, and (Domar, 1972, p. 151) on the Soviet Union.

36. Quoted in (Stewart, 1976a, p. 126).

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37. See in particular the excellent special issue of World Development devoted to a survey of technology exports by the newly industrializing countries (Lall, 1984)
38. Cited in Westphal (1984). (Lall, 1984, p. 507). Original source (Westphal, 1981).
39. Westphal et.al. (1984) argue that ..."Export activity not only compresses the time for experience to be accumulated, it also affords a wider variety of experience in more diverse circumstances. It can thus be expected to accelerate cost reductions from learning and to deepen existing capabilities" (pp. 528-29).
40. See, (Mitra, 1979, pp. 2-4).
41. In the development of the Argentinean machine tool industry local manufacturers sought to acquire licences from foreign producers for the purpose of promoting exports; the acquisition of the trade names being seemingly more important than the transfer of the technology. See Cortes (1978, p. 16). For a wide- ranging discussion of trade-marks and technology transfer, see Stewart (1979).
42. The Lagos Plan of Action for the Implementation of the Monrovia Strategy for the Economic Development of Africa's, adopted by the Second Extraordinary Assembly of the Organization of African Unity (OAU) Heads of State and Government, Lagos, Nigeria (April 1980).
43. This is saying something very different from lowering the importance given to the agricultural sector, both in terms of raising its productivity and in improving Africa's self-sufficiency in food production.
44. India's technology development strategy is likewise considered inappropriate: through collaboration with Western partners it produces capital-using machinery, producing it - because of the lack of effective local demand - at high-cost. Moreover, weak competitive pressures in the highly regulated domestic economy ensure that technological "independence" has only been gained at the expense of design and innovational "dependence".
45. This is certainly the case for the newly industrializing countries, though for the advanced nations Sweden may represent a notable exception.
46. In this respect Wad (1984, p. 343) argues ..."The concern over technological dependence is inseparable from the concern over what constitutes an appropriate industrialization strategy and stems to some extent from a growing realization that neither the conventional capitalist nor socialist patterns are suitable for the African context and that there is a need, in Forje's words, for a "third way to development". See Forje, J (1978-79).
47. From the document "The Ten Great Relationships", presented in 1956 by Mao. Cited in Singh (1979, p.589).

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RESUME

L'on pourrait décrire à juste titre l'Afrique comme le "dernier bastion" du monde où le développement économique reste à conquérir. Il faudrait que le Continent s'industrialise tout comme cela a été le cas dans les autres régions du Tiers Monde s'il veut s'affranchir de sa dépendance quasi totale des cultures de rente et partant des conditions climatiques pour pouvoir développer son économie. Or il importe au premier chef de placer le développement endogène de technologies au premier rang des politiques nationales pour que le processus d'industrialisation soit viable.

Cet article fait un inventaire des avantages économiques tirés par un pays qui encourage le développement des capacités nationales de fabrication de biens d'équipement. Les raisons fondamentales qui poussent les pays en cours d'industrialisation à déployer des efforts pour développer leur capacité de production de biens d'équipement transcendent en général les contraintes rencontrées au niveau de l'efficacité de fonctionnement de ce secteur au cours de la première phase de son évolution. De toute évidence, la thèse de l'industrie naissante a été brandie à telle enseigne qu'elle a fini par annihiler le rôle déterminant de l'efficacité économique pour la première étape du processus d'industrialisation, lui substituant pour une grande part une pléthore de considérations non plus économiques.

L'auteur conclut son article, après avoir examiné l'une de ces considérations les plus importantes, sur une évaluation des diverses stratégies de développement technologique s'offrant à l'Afrique.

BOOK REVIEWS

Issa Shivji, ed., The State and the Working People Tanzania (Dakar, CODESRIA Books Series, 1986) pp. 194.

Ibbo Mandaza, ed., Zimbabwe: The Political Economy of Transition (Dakar, CODESRIA Books Series, 1986) pp. 430.

These books represent collaborative efforts by academics resident in Tanzania and Zimbabwe respectively to provide informed and critical analyses of contemporary developments in their own societies. The books represent solid evidence if any was required, of the seriousness of purpose, academic integrity, self-sacrifice and frustration which are the lot of a small, probably dwindling, but truly committed group of African scholars who are looking askance at the saddening pace and direction of social change in Africa. At this point in time, the two books represent some of the most critical, incisive and comprehensive evaluation of the socio-economic change in the two countries. Mandaza's book in particular has no serious rival in the market by sheer dint of depth and range of subjects covered. Yet for all their many virtues the books symbolize a crying need for African social science to break from the theoretical shell of received explanations of the African predicament - and in particular those associated with 'dependency' and unrefined definitions of 'neocolonialism'. But this criticism is one which ought to be addressed to the African social science community as a whole and we shall return to this issue at the end. For the moment, suffice it to note that the editors and contributors in these two books set themselves more modest goals: an exposé of true state of the nations.

The blurb on Issa Shivji's book in fact proclaims that the contributors to the State and the Working People of Tanzania were determined to show that "the emperor is naked" by exposing the true character of the state in Tanzania and its relationships with ordinary people. In doing so the authors have left no stop unpulled. The picture which emerges from all the chapters in this book is one of an increasingly authoritarian state riding roughshod on the political rights and economic interests of the people, in the Trojan horse of a

"Peoples" one-party, one-policy regime. The recurrent explanation for this state of affairs is one which Shivji has made on occasion, notable in Tanzania: The Silent Class Struggle: the "neo-colonial state" in Tanzania is depicted as a vehicle for advancing the petit-bourgeois interests of the state bureaucrats and the party apparatchiks, and of repressing peasant, student and working class aspirations. "Neocolonial" interconnections between the Tanzanian state and international capital are said to have intensified notwithstanding the policies of "socialism and self-reliance" enshrined in the Arusha Declaration of 1967. Although the contributors refrain from a wholesome embrace of dependency theories, the overall impression created is that the real culprit is a hapless national petit bourgeoisie caught in the swirling vortex of a scheming western imperialism, which can stand neither development nor democracy in the Third World. There is a sense of déjà vu to all this.

The opening shot in the Tanzanian volume is the introductory chapter by Issa Shivji arguing that political independence facilitated the internal realignments with imperialism making for an "authoritarian neo-colonial state", with peasants, workers and now students as its principal victims. From here the other contributors - mostly from Dar-es-Salaam's Law Faculty - take the cue armed with a passion and facts.

H. G. Mwakymbe traces the eclipse of parliamentary democracy in Tanzania beginning the mid-sixties, and argues that one party system was not all the consensual and peaceful affair that Tanzaphilics make it.

Parliament lost power to the National Executive Committee (NEC) of the ruling party and a strong executive presidency. NEC has usurped policy-making, legislative and quasi-judicial powers over the years, and the 1977 constitution has enhanced these. This theme is reiterated by A. K. Mlimuka and P. J. Kabudi in their chapter on state-party relations. Contrary to the conclusion by Professor Granford Pratt that NEC is a democratic forum, real power rests in the hands of a selected few. And this power has risen inversely with the input of popular participation in party affairs, co-operatives and local government. Centralized power is also a contributing factor to the economic crisis now facing the country.

State policies towards labour and the peasantry are considered to be hardly benign. Wilbert Kapinga details the emasculation of free, militant trade unions in 1964 and the reconstruction of trade unions

as official organs of the party, subservient and beholden to it. The result is familiar elsewhere in Africa; real wages have fallen dramatically and working conditions have worsened. Mapolu arrives at similar conclusions on the state of the peasantry following what he calls "chaotic" villagisation in the 1970s. Production fell as a result of the demoralization, force, and indifference visited on peasants by bureaucrats and 'Kulaks'. Peasants in the end even lost control of co-operatives as Naali shows. Yet the basic problem as Mapolu sees it is that the "neo-colonial situation basically continues the colonial policies in the economic area... and attempt to incorporate the peasantry... into the ambit of world capitalism". This is exactly the opposite of Goran Hyden's proposition in Beyond Ujamaa but neither Mapolu nor his compatriots seem keen to debate this important issue.

Before leaving the Tanzanian volume, it is worth noting the absorbing and pioneering chapter on student struggles by Chris Peter and S. Mvungi. Though polemical in places, it manages to bring out the history of the student movement in mainland Tanzania and its physical and ideological confrontations with the party. As was the case with the trade unions, state power was brought to bear against student militancy producing a timid student organization enjoying a clientage status with the party. With this died the vigorous academic debate on socialism.

If the case studies on Tanzania recount the story of "Ujamaa" as socialism gone astray in the landscape of neo-colonialism, the chapters on Zimbabwe strike a pessimistic note on the prospects of transition to socialism in Zimbabwe against the bastion of the colonial settler-dominated institutional set-up which the Mugabe government has inherited. While Tanzania rhetorically and officially sought to avoid Kenya's development model - acceleration on the rails of colonial capitalism - many of the Zimbabwean authors fear that their country may be poised in that direction. There are major differences between Zimbabwe and Kenya of course but the Mandaza volume brings out many painfully striking parallels.

Mandaza's "Introduction" and his opening chapter "The State in Post-White Settler Colonial Situation" sum up this anxiety, and the latter chapter is one of the best I have seen on the state in Zimbabwe after independence. Mandaza is keen to delineate the weakness and cleavages of African nationalism and the durable character of the state apparatuses of the ancien régime underlined by western capital. His only omission is to address the class of ethnic resurgence in Zimbabwean politics, which is addressed at length by Masipula

Sithole in his analysis of the 1979, 1980 and 1985 General Elections.

The chapters dealing with the economy reiterated the fact that the Zimbabwean economy has not experienced any fundamental structural change since independence. Xavier Kadhani argues that even SADCC has not substantially altered the situation, while Theresa Chimombe demonstrates the shifting dependence from private capital flows to official development aid especially after ZIMCORD in 1981. But one of the most outstanding chapters on the economy is Daniel B. Ndela's on industrialization policy. Although once again the accent is on the lag in structural change, the industrial sector is shown to be mineral and consumer-goods production oriented. Like elsewhere in the developing world it has low rates of labour absorption and in spite of efforts over the UDI period - it is still dependent on imported intermediate inputs. By way of a solution, Ndela proposes greater state intervention in the industrial sector and backward linkages favouring inputs of local raw materials.

But it is land and white-settler agrarian policy which was at the heart of Zimbabwe's independence struggle. The inchoate character of land reform comes through the three chapters devoted to the "Agrarian Question". Sam Moyo indicates that the dominance of the large-scale commercial farmers in overall marketed production and policy-making has not yet been broken, despite the settlement schemes, increased share of peasant production in maize and the new co-operative schemes in the old Tribal Trust Lands. Like in Kenya in 1960s and 70s, African capitalist farmers making inroads into large scale farms have made common cause with the erstwhile settlers and the African yeomanry which emerged from African Purchase Programme going back to the 1950s. Moyo concludes that Zimbabwe has "an essentially unchanged agrarian structure five years after independence"; a view echoed with variation in the two other chapters on agriculture.

The question of working class absence in the fighting front (despite its long anti-colonial record), which has puzzled Zimbabwe watchers is dealt with by Lloyd Sachikonye. Industrial unrest became endemic only on the eve of independence and after it (1980-81) and the major causes were higher wages and better working conditions, not structural reforms, much less a proletarian takeover of power.

There are an additional four chapters: one on human resource constraints to development by Raftopoulos; education by Zvobgo; health care delivery systems by Samuel T. Agere, and the women issue by Joyce Kazembe which portrays Zimbabwean women as both

underprivileged and complacent.

Throughout this book, the integration of Zimbabwe in the world capitalist system and her continued, subordinate role in it is seen as the primary cause of its continuing underdevelopment and inequalities. But since Zimbabwe was colonized from South Africa, international capital made its inroads from there as is evidenced by Zimbabwe's continuing industrial and commercial relations with South Africa. The absence of a chapter on the evolving situation in the sub-continent and of the implications of South Africa's liberation is a glaring omission in the Mandaza volume even though the editor claims the book was written by and for Zimbabweans. Zimbabweans happen to be on the frontline.

As we mentioned earlier most contributions in both books have laid blame on "neo-colonialism", the myopic character of the national petty bourgeoisie and the constraints imposed on Africa by international capitalism. There are at least two main reasons why African scholarship must seek to transcend this paradigmatic mould. Firstly, it is highly unsatisfactory to ascribe development experiences as diverse as those of Tanzania, Zimbabwe, Kenya, Uganda or Ghana principally to the functioning of international capitalism as if any outcome was satisfactory to the latter. Not all the contributors are of course guilty of this. The balance must now be tipped in understanding the domestic power base and decision mechanisms of Africa's ruling elites, rather than merely depicting them as petty-bourgeois compromisers with imperialism. Finally, for most of the authors some form of detachment from international capital and the building of genuine (scientific?) socialism are seen - though somewhat obliquely - as constituting a way out of the present quagmire. It now needs to be clearly spelt out what this involves in practical terms given recent experience with socialist economies not just in Africa but in Cuba, the Soviet bloc and China.

These two books will be useful to African students, scholars, informed readers and others. The authors, editors and CODESRIA must be congratulated for demonstrating that good academic products can be made in Africa by Africans. These two books are a challenge to scholars in other African states which could do with similar readers.

Michael CHEGE

(University of Nairobi).

John Sender and Sheila Smith The Development of Capitalism in Africa (London: Methuen, 1986).

It had to happen sooner or later. Someone was going to write a book on Africa purporting to substantiate the Bill Warren thesis of imperialism as pioneer of progressive capitalism. Sender and Smith have taken this task upon themselves. Significantly, one of the authors, is editor of Bill Warren's work.

The first chapter is a straightforward, if somewhat pallid rendition of Bill Warren's tendentious reading of Marxist's position of what capitalist accumulation and its world-wide dynamism are. It is written as if Warren's thesis has not been seriously challenged and there is therefore no attempt to re- argue Warren's case in light of the critique.

The leit motif of the book emerges in the second chapter and this is that trade in the colonial period had effects which were "extraordinarily far-reaching". Parenthetically, the mobilization of virtually every verbal accolade to the dynamism of colonialism recurs throughout the book with a frequency that betrays the authors own disbelief in the credibility of their case. Thin on theoretical substance it relies on cavalierly deployed "facts" to counter all those on the left who have somehow not held the Warrenite vision.

First, the authors seek to establish that colonial trade had both backward and forward linkages contrary to claims by the Barans, Hirshmans and Rweyemamus, that the colonial export economy was an enclave. To prove their claims of extensive backward linkages of the colonial export economy, the authors include any production unit - a soap factory here, a saw mill there, a groundnuts plant in Senegal, a tea factory in Uganda - as evidence of the dynamic links that the export economy had with the rest of the economy. The demand for 700 hoes for rice growing in Tanzania over a decade is thrown in for good measure. The case on forward linkages is even weaker. After exactly two paragraphs of "evidence" the authors tell us that the scale and range of forward linkages from the expansion of exports "must be regarded as impressive both in absolute terms and in comparison with the negligible spread effects associated with pre-colonial (sic) trade" (p. 29). The reason why the authors seem to believe that their bits and pieces of evidence is telling is because they have self-servingly created a veritable strawman against whom any sign of capitalist relations

(wage labour or land markets) or any "linkage" generated by the export sector (bakery producing wage goods, a tea processing factory, a railway line carrying ore) can be used to clinch the argument. To suggest, for instance, that the establishment of soap and furniture factories, brickworks, printing presses, saw mills, flour mills, oil mills, rice mills, breweries, pre-cast concrete, cotton weaving and the 700 hoes refutes Rweyemamu's claim of the perversion of the accumulation process in colonial Tanzania is patently foolish. The point of contention has never been that the export economy failed to spawn such activities but rather that these linkages were extremely weak when compared to the "historical trends" established by such authors as Hoffman, Hirshman etc. and the historical input-output structures of various economies at similar levels of development.

A simple piece of evidence of the dynamics of the export economy would have been the share of manufacturing value added in GDP or the share of wage labour in the total economically active labour force or some composite index of these. However, such evidence (and it is available) would have been cold comfort for the authors and so they nimbly sidestep it to harass the reader with unassorted account of factories scattered across colonial Africa.

The story on changes in relations of production in agriculture is told in similarly extolling terms. Here the authors conclude, once again after the presentation of the barest evidence, that "the historical outcome in many areas in Africa is not in doubt: rural relations of production changed rapidly and radically" (p. 28). As for the process of proletarianization we are simply informed it was "phenomenal".

The Africa that emerges from this account is one endowed with dynamic exports sectors, with extensive and wide-ranging linkage effects and with a population large shares of which are wage earners in capitalist enterprises - both foreign and domestic. If this is not a recognizable image of this our very palpable underdeveloped Africa on the eve of independence, it is largely because it is a polemical fiction created by the authors for the express purpose of sustaining a thesis - in this case the Bill Warren thesis on "progressive capitalism".

In the fourth chapter, the post-independence era is presented as a "decisive" quantitative and qualitative shift in the possibilities of state intervention which is crucial for industrialization by import-substitution, a condition which is "central to accumulation in late industrializing countries". It is not clear why this should be the case given the encomia lavishly heaped on colonial accumulation.

Surely if the colonial export economy had yielded "phenomenal" rates of proletarianization and "rapidly and radically" transformed rural Africa and had produced "impressive linkages", independent states would be hard put to perform better. In any case, without indicating clearly in what way independence has made a difference and given the position of nationalism in the authors' demonology, we are informed that the expansion of the forces of production in many post-colonial African economies has been "extremely rapid" (p. 67). Characteristically, the authors conveniently fail to see that "rapid" industrialization was largely a reflection of the extremely low starting point inherited from their dynamic colonialism and involved the most elementary forms of industrialization that colonialism had hitherto blocked. It is no wonder that these "extremely rapid" rates of accumulation took place in the decade immediately after independence and their duplication has proved extremely elusive since.

The account of post-independence economic performance consists of something like this: Take the annual reports of the World Bank since 1960, the modal year of Africa's independence, select a number of countries and some "social indicators", "marxify" the language of the Bank's accounts of success and failure. And, voilà, you have a "marxist" analysis of Africa's accumulation ordeal since independence appearing as a success except in those countries pursuing the wrong macro-economic policies. However, World Bank reports have, until the recent domination of the monetarists, been more cautious in the use of figures. The Bank would not be as foolish as to treat as success increases in output in cereal production without referring to population changes. The very sources that these authors use show that with the exception of only six countries (Malawi, Swaziland, Burundi, Cameroon, Rwanda, Ivory Coast) output increases in agriculture has fallen behind population growth. They also show that for close to half of African per capita growth rates have been negative. Such has been the true nature of "the impressive overall growth of agricultural output".

Failure to grow is, in the spirit of the World Bank orthodoxy blamed on failure to promote exports. The authors' ignorance of the African experience emerges glaringly when they pick on Ghana as an example. They seem totally unaware that Ghana's pessimism about export prospects was not due to some crazy nationalist notion but a result of some rather painful experience. The Nkrumah regime with all its nationalist credentials intact, actually doubled its production of cocoa between 1957 and 1965 only to find itself receiving less absolute revenue from exports. Even the World Bank has become less

sanguine about the export prospects of the poor countries. Ivory Coast is today being penalized for its success in export promotion. The authors praise those countries which have increased their export incomes despite declining barter terms of trade. At the risk of being considered squeamish by the authors we must point out that in one case - Malawi - this has taken place by lowering the living standards of the workers during the entire export "boom".

Why have Africans failed to follow the correct path of export oriented growth? The authors argue that the main culprits are the "ideological tenets" held by some unnamed composite character made up of Samir Amin (who is not listed neither in bibliography nor in the index but a known Sheila Smith's bête noire) Fanon, the Latin American "Cepalistas", the Dependencia school and the "political hegemony of nationalism". This composite character is against export orientation and pursues import substitution in a totally reckless manner.

This composite monstrosity is the true enemy of the working class who, according to the book's blurb, are placed in the forefront of the analysis. As it turns out the placing of the working class at the forefront is no more than a head count of wage employees who seem to have no political role other than teleologically and paternalistically assigned to them by the authors. Struggles by workers against unfavourable trade relations, transfer of surplus by TNCs, world recessions, perpetuation of colonial forms of exploitation, imperialism etc. is dismissed as merely a ploy by the national bourgeoisie to "deflect criticism by resort to anti-imperialist rhetoric and to blame scapegoats for economic failure". Consequently any participation by workers against these aspects of the system is considered utopian and an unfortunate capitulation to nationalist mystification. Class conscious workers would presumably be those who welcome their countries exploitation by transnational capital as a necessary precursor of the socialist revolution, assuming that even that ever becomes necessary, given the dynamism and democratic thrust ascribed to capitalism. What the authors have placed on the forefront are not the blood and flesh-working class of Africa's "effective reality" but a teleologically defined working class perfunctorily dragged in at the end of the authors analysis to cheerfully assume the warrenite burden of "progressive capitalism". The African workers have to contend not only with nationalist obscurantism against which Sender and Smith rave, but also against the paternalism and the proletariat messianism of a "left" that has joined the right in its interpretation of Africa's underdevelopment.

Capitalism is a dynamic system. This it has proved time and again. It is therefore a question of profound theoretical and practical interests that in some parts of the world the dynamism of the system was blunted. Accolades to capital in general will not do to answer this question nor will mindless empiricism of Smith and Sender conceal the fact of underdevelopment in Africa. In trying to argue against the "development of underdevelopment" school Sender and Smith throw away dialectics and are left with an equally linear, albeit, more ridiculous view of capitalism in the periphery.

The significance of this book lies not in its scientific value (which is meagre) but in the fact that it is part of a genre of current writing on Africa that is intended to unburden the erstwhile colonial masters of any sense of guilt they may have felt about the pain, suffering and dehumanization they inflicted in their past doings on the rest of humanity. In this new spirit nationalism is discredited as simply obscurantist and the venality of some of the purveyors of this nationalism is used to completely absolve the object against which this nationalism was directed - imperialism. The book is part of the cultural and intellectual atmosphere which sustains nostalgic films about the colonial past, nourishes laudatory accounts of the economic role and civilizing mission of colonial rule and makes bashing of "nationalism" à la rigueur. It is the economist's version of "Out of Africa".

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CORRIGENDUM

Due to an unfortunate oversight, we omitted the bibliography of the article by Guy Martin "*Zone Franc, Sous-Développement et Dépendance en Afrique Noire Francophone*" which appeared in **Africa Development** - Vol. XII, N°1, 1987. We apologize for any inconvenience and herewith enclose the Bibliography.

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