Mass Emergencies 4 (1979) 95–104

THE ETIOLOGY OF HUNGER: THE EVOLUTION OF FAMINE IN A SUDANO-SAHELIAN REGION*

Michael J. Watts

Department of Geography, University of Michigan, Ann Arbor, MI 48109, U.S.A.

> The evidence now before us – of a world which can produce automobiles, television sets, etc., at a greater speed than the increase in population, but is simultaneously menaced by mass starvation – is disturbing.
>
> *N. Georgescu-Roegen*

The crisis generated by a famine, or indeed any disaster, reveals the inner dynamics of social and economic systems. From this perspective, it is noteworthy that those who cultivate the land in the Third World are also those to suffer in times of dearth. Town dwellers and urbanites continue to eat during periods of severe food shortage at the expense of rural producers who starve to death. An explanation of this paradox lies in the condition, genesis and reproduction of inequality among rural classes, and thus famine in the underdeveloped world becomes inseparable from those processes of "development" and "modernization" which embrace and transform village production systems. This article will analyze these relationships in a Sudano-Sahelian region of West Africa in northern Nigeria. It consists of two discrete parts: first, a description of famine in the social context of the pre-colonial period and the subsequent changes wrought by colonial domination; and second, an analysis of the dynamics of contemporary famine at the regional and village levels using two case examples from 1972–1974.

FAMINE IN NINETEENTH CENTURY HAUSALAND

The basic unit of production in the nineteenth century was the household, perhaps embracing sons, clients and slaves in an extended domestic structure in which the householder organized production and distribution and paid taxation (Hill, 1977; Shenton & Freund, 1978). Households were often subsumed in communities controlled through the agency of village heads whose responsibilities extended to land sales and village adjudication. A proportion of the peasant surplus was expropriated by a ruling class in the form of either labor, grain, or cash. The office holders had tenure over "fiefs' given by the Emir, though they usually resided on private estates worked by slave, client and hired labor. They could also demand corvée labor from villages within their territorial jurisdiction. Slave labor, though crucial to the functioning of the large estates operated by the ruling class, was not a dominant characteristic of the productive system. Craft production and petty commodity production, generally

*The field work for this study was undertaken between 1976 and 1978. I would like to acknowledge the financial support of the National Science Foundation, Resources for the Future, Social Science Research Council and the Wenner-Gren Foundation. In addition, I would like to particularly thank Robert Shenton, Bill Freund and Richard Palmer-Jones for their assistance.

emanating from within the household structure, was conversely a widespread phenomenon throughout Hausaland. The State controlled the means of coercion, provided protection for the peasantry and traveling merchants, organized large scale labor projects and acted as a guarantor in times of need. Within this social formation, the nature of seasonal scarcity and famine assumes a historically specific character.

Disasters generally, and famines in particular, are not new to Hausaland. In the nineteenth century, crises of under-production occurred in which basic biological requirements could not be fulfilled – usually as a result of famines, disease, locusts or warfare – and are well documented in the historical chronicles. During the middle of the eighteenth century, moreover, a disastrous series of droughts and related epidemics which spanned a twenty year period, struck the northern savannas from Senegal to Somalia producing economic disarray, mass evacuation for the Sahel, ethnic and no doubt monetary redistribution and presumably a dissolution of the large slave estates. It is even suggested in the Kano Chronicles that famine was instrumental in the evolution of the State itself. Superimposed on the pattern of major climatic disturbances were epicycles of more frequent but localized drought and food shortage occurring perhaps in the order of once every seven or eight years and usually regional in character. Between the Jihad in 1804 and the multi-year drought in 1913–14, it appears that the savannas were relatively free of an internal disaster of the scope and magnitude associated with the famine of the 1750's.

In view of the regular variability in precipitation regimes and corresponding fluctuations in food availability, it is not surprising that Hausa communities had historically derived strategies to cope with drought and food shortage (Watts, forthcoming). In tandem, these coping mechanisms constituted for a large proportion of the peasantry a type of moral economy in which a safety-first principle, a right to subsistence and the norms of reciprocity and redistribution were all paramount (Scott, 1976).

(1) Response to Drought. The existence of a precarious environment has given rise in many peasant societies to a subsistence ethic predicated upon a safety-first or risk aversion principle. In practice this might involve a plethora of locally adapted cereal varieties, a preference for the consumable versus the marketable, or reliance on historically established planting and intercropping strategies. Throughout much of nineteenth century Hausaland, the peasant economy conformed in large measure to this rough archetype. The basic agronomic strategy consisted, as it does today, of the intercropping of sorghums and millets, each characterized by contrasting moisture requirements. At a higher level, this complimentarity was supported by, in some locations at least, a complex orchestration of microenvironments involving variations in spacing, moisture availability, and soil type, all of which were joined through complicated sequential patterns of decision-making dependent upon the onset, character, and duration of the rains. Such adaptive programs could be supplemented by other drought resistant crops like cassava or the resort to foraging, collecting and hunting. In this way, agricultural diversity and agronomic variation bred a sort of systemic stability.

(2) Response to Food Shortage. The subsistence ethic was also expressed through social activities and institutions which functioned as, among other things, guarantors of a minimum food supply. Fundamental to the preservation of a measure of self sufficiency was, of course, storage which permitted the long term constitution of reserves sufficient to cover seed requirements and grain during the period of preharvest hunger. The closure of household granaries during the post harvest period often corresponded with the departure of adult males on dry season migration frequently as corvée labor on State sponsored (defense) projects. During the wet season itself, when seasonal food shortages peaked, hardship could be partially alleviated by participation in communal work parties and short-distance migration making use of the variation in the onset of the rains and hence in the timing of planting, weeding and harvest. Central to the subsistence ethic, however, and to the moral economy in general was the "logic of the gift". This was a vital redistributive mechanism in the peasant economy (Raynault, 1975).

Kinship and descent groups served to spread risks and to insure collective security. The non-Muslim Hausa clan segment functions precisely to this end:

> [The segment] has but one function: when the grain stores of one household are exhausted, its head may borrow grain from another [segment] household and repay that grain at harvest without interest (Faulkingham, 1971:123).

At an ideological level, the redistributive ethic was reiterated through a Muslim dogma which saw gift-giving as obligatory for the rich and the office-holders. At another level, other formal institutional mechanisms incumbent upon the ruling elite served to free resources from the rich to the peasantry. The communal work group was a case in point in which foodstuffs were released during the critical preharvest period (Raulin, 1964). A rather more elaborate instance was the institution of *sarkin noma* (lit. king of farming), described by Nicolas in Kantche (Nicolas, 1966) who is elected by virtue of his capacity to produce in excess of 1000 bundles of grain. In essence, it is an attenuated variant of the North American "potlatch" in which prestige is accrued through the ceremonial distribution of resources. The office of *sarkin noma* entails on the one hand a redistribution of foodstuffs through the harvest festival and on the other it is:

> .... the ultimate defense against famine: when the grain in any gida is exhausted, the residents may obtain an interest free loan of grain from the S. noma's bins, to be repaid at harvest (Faulkingham, 1971:81).

In a society predicated upon hierarchical relations between rulers and ruled, it is hardly surprising that the upper echelons of political authority in nineteenth century Hausaland were expected to act as the ultimate buffers for the village level redistributive operations. The responsibilities and obligations of the village heads were quite clear in this respect and when their capabilities were over-ridden as, in cases of extreme seasonal hardship, the next level of the hierarchy, the fief holder, was activated. In Katsina Emirate, for example, the district heads often kept grain at several centers throughout their district and frequently in villages where they may have acted as patron to a number of clients. These graduated responses terminated with the ruling elite, which used the grain tythe for central granaries employed to redistribute surpluses during famine periods (Smith, 1967:112–115; Palmer, 1911).

In this fashion, responses to food shortages were graduated with respect to time and depth of commitment (Slobodkin & Rapoport, 1974). The early responses tended to be shallow and reversible – perhaps the sale of livestock or familial loans – and the later ones less flexible, perhaps culminating in widespread dislocation through permanent out-migration or even death. All this is not to suggest a Rousseauian pre-capitalist bliss, a glorified peasant life somehow optimally adapted and ultra-stable. As Beach (1977) has shown for the Shona in an ecologically similar region in Central Africa, the historical record is littered with references to famine and it is clear that the response system was totally over-ridden in some instances. Rather, I simply wish to suggest that the indigenous society could institute various individual and collective practices, some of which are still extant, which permitted a margin of security. But, as I hope to show, in different historical circumstances this margin can be radically transformed.

FAMINE DURING THE COLONIAL PERIOD (1903–1960)

In contrast to the static view of African history which sees the pre-colonial epoch as simply "traditional," it is clear that Hausaland during the nineteenth century was dynamic, changing and developing commercially. Long before the advent of the British colonial armed forces, northern Nigeria had been subject to the penetration of British capital. From 1903, however, many of the economic changes wrought by mercantilist expansionism were intensified and codified, so to speak, and radical transformations effected which gave famine, and food shortage generally, a new dynamic.

The new colonial administration sought, through taxation, to divert as much of the surplus formerly extracted by the ruling elite to their own coffers. Taxes were reorganized but for the most part remained at the same level and in some cases revealed sharp increases to compensate the declining revenue of the elite (Watts, forthcoming). More traumatic, however, was the enactment of a tax in cash not grain which was effected in 1910. Not only did this undermine the *zakkat* based grain reserve but determined the penetration of a generalized modern currency into indigenous economic systems. Furthermore, taxation had profound and direct implications for hunger itself. First, unlike the indigenous Hausa fiscal system, colonial taxes were regular, reasonably predictable and *rigid.* The inflexibility accordingly took no account of the realities of Hausa life among which were late rains, poor harvests, seasonal hunger, and a precarious environment subject to perturbations such as locust invasion or epidemics. The severity of colonial taxation contrasted sharply with an indigenous system which the latter thought far from being innocent of extortion, made an attempt to graduate taxes according to existential circumstances (Palmer, 1908). Second, the *timing* of tax collection assumed a colossal importance. This was especially the case throughout the principal cotton-growing areas where annual taxes were gathered prior to the cotton harvest. The rural cultivator was thus left with little choice but the sale of grains when prices were lowest or alternatively became vulnerable to the clutches of the moneylender. And third, the taxation system was inseparable from the colonial policy of the extension of commodity production and cash cropping into the countryside. It is quite clear in this respect that in northern Hausaland, that groundnuts were the principal taxpaying crop. This perhaps goes a long way to explaining the apparently "irrational" behavior of a peasantry which produced more groundnuts when the commodity price had actually fallen. More generally, of course, the "groundnut revolution," particularly in the close-settled zones, meant a decrease in the area devoted to foodstuffs, increasing subjection to the vagaries of the world commodity market and the ever present threat of indebtedness at the hands of middlemen. It is precisely in this way that the nature of seasonal hunger changed both in terms of its dynamics and the predicament of those who find themselves suffering from its effects. The net result tended to be that seasonal hunger on a local or regional scale devolved into fully-fledged famine, as was the case in 1913–14, and set a precedent for the colonial period generally.

Despite the commercial setback of the 1913–14 famine, the groundnut revolution picked up momentum and became emblematic of the subsequent expansion in the produce trade. Through this process of commoditization and the increasingly important role which money came to acquire, it is hardly surprising that the new forms of indebtedness arose. This is especially so in the case of the co-evolution of the *'yan baranda* system and the cash-crop economy. The *'yan baranda* constituted the lower orders of the export crop buying hierarchy, receiving cash advances from European firms via their buying agents. These sums were in turn lent directly to the producer who pledged his crop to the agent. The interest on such loans was frequently in the order of 100% and for the producer at least was the initial step into a cyclical debt trap. It is precisely in this manner that urban and merchant capital penetrated the countryside and illuminates the way in which a domestic unit is drawn into an external merchant network. As Shenton and Freund so nicely put it,

> the most successful traders stood at the apex of a hierarchy of credit and clientage that rested on the shoulders of village middlemen, living in the interstices of a colonial economy dominated by the European firms (Shenton and Freund, 1978:13).

The deepening involvement with commodity production and cash crops naturally impinged upon the social organization of agricultural production itself. Claude Raynault (1975) has shown how, in the groundnut zone of Niger, this has taken the form of the dissolution of traditional estates, an escalation in land sales and the generalization of hired farm labor. Changes in the sociology of production were coupled with the profusion of imported commodities especially cloth which articulated with the cycle of rapidly inflating prices for ceremonial exchanges on the one hand, and the chain of indebtedness on the other. Stresses consequently were imposed upon the corporateness of the rural world. The old responsibilities and obligations became less binding, communal work groups largely disappeared and the extended family became less embracing and hence increasingly incapable of buffering individuals in crisis. In the densely settled areas, the extreme land shortages heralded larger food deficits and heightened vulnerability to seasonality. The household showed the first signs of fission and collective security had lost its original meaning. The old universe no longer possessed its intrinsic reality; social and familial solidarity appeared to be dissolving and the gift lost its original significance. As Wolf (1969) has put it, the peasantry were torn from a social matrix of kin affiliation and obligation and for whom the existential problem of subsistence became suberservient to marketing behavior. In short, the social nature of the subsistence system and the qualities of the moral economy were severely ruptured. Reciprocity and solidarity and hence the nature of inequality itself had changed.

The general point I wish to make is that after 1903, the margin of security for the Hausa peasantry came under siege. The Colonial Administration, only too aware of the dangers of over concentration on cash crop commodities, a heavy tax burden, and the spectre of starvation, tended to be ambivalent or to overestimate the resiliency of the peasantry. The outcome was, in contrast to the previous century, that Hausaland suffered from three major famines in 1913–14, 1927 (1931 in much of Niger) and 1942 despite the fact that climatic variability became less crucial in the actual genesis of food shortage.

Hopefully, I have managed to convey the dynamic and historically contigent character of disasters such as famines, and hence how fallacious it would be to glibly assume that hunger is simply an outcome of a Malthusian demographic trajectory or of a malevolent environment. In the final section I will attempt to analyse the changed circumstances of the contemporary period, and specifically the 1972–74 famine in northern Nigeria using village level data.

THE 1972–74 FAMINE: TWO CASE STUDIES

The following is, in very abbreviated form, an analysis of the current food situation based on village level material from Katsina and Daura emirates. These data (taken from Watts, forthcoming, and Ahmed, 1976) pertain to the most recent famine. I will try to show that a combination of population growth, the decay of many redistributive mechanisms and wider political-economic changes have dramatically lessened the margin of security for the poorer peasantry. In practice, this means that the flexibility and capacity to respond adequately to hunger is tightly circumscribed and the effects of famine are subsequently magnified to the extent that some households are incapable of rebuilding resources to pre-famine levels. I will argue that in many cases this fundamental dilemma assumes the form of a cyclical poverty-debt trap.

The climatic data indicates that precipitation throughout the north of Nigeria tended to be below the 1930–1960 means for both 1972 and 1973, the annual total for 1972 and 1973 were 18.69 and 17.36 inches respectively. The growing seasons were correspondingly slight and for 1973 fell to 80 days. (This figure is 40% below the norm.) Naturally, annual totals tend to mask the important intraseasonal variations which are of much greater import for the farmer, and give little feel for the enormous spatial variability in the rainfall pattern. Significantly in this respect, the 1969 total was, in fact, less than either 1972 or 1973 and was not characterized as a year of particular hardship. Nonetheless, it is clear that 1973 was a bad year as reflected in the crop yield data. In Rijiyar–Tsamiya (Daura Emirate) yields were estimated to be 50% of normal and in Sabo (Katsina Emirate) between 25 and 30% of a good year (although both figures are considerably less than the official State Government projections). The harvest reduction for 1973 was unquestionably related to the lack of seed. The mediocre 1972 harvest, soaring cereal prices on local markets, and the soporific response of the government adversely affected output. Corresponding to the poor production figures was a much more important temporal pattern of grain prices. During the early months of 1972, both Daura and Katsina regions report millet and sorghum prices of approximately $ 100 per ton; by January 1973 the figure had risen to $ 180, and by July 1974 was in excess of $ 250. In isolated markets, prices well over $ 300 per ton had been reported.

In both Sabo and Rijiyar–Tsamiya the graduated sequence of responses to drought and eventual food shortage conformed to a similar pattern. Generally, the initial reactions were shallow and gradually over-ridden by deeper and in some ways less reversible responses. The onset of drought tended to be met with a battery of agronomic mechanisms such as changed planting schedules, cropping patterns and cultigen varieties and in some instances simple moisture preservation techniques. However, the mediocre harvest in 1972 meant that many granaries were bare by the dry season. In most cases, households attempted to cope locally, principally by selling their labor power, and livestock, pursuing various crafts and making extensive use of substitute foods. It was the failure of the rains in 1973, nevertheless, that heralded real disaster. By this time the poorer households had sold most livestock during the previous year, the labor market for local employment was grossly over-supplied, wages fell, and even for those able to find employment the cereal inflation meant a radical transformation in the terms of trade against them.

During the 1972–74 period in Rijiyar–Tsamiya, 2/3 of the cattle, 3/5 of the sheep, 2/3 of the goats, and 1/2 of the donkey population changed hands. As a broad pattern, 80% of the households sold labor, 60% sold livestock and fodder, and 35% sold manure or firewood. The development of chronic hunger, however, necessitated more drastic strategies. Principally this meant a resort to loans in cash or grain for village traders, the pledging or outright sale of farms, or, ultimately, outmigration. In Sabo village, just over 30% went into debt while for Rijiyar–Tsamiya the corresponding figure was 26%. Land transfers are notoriously difficult to trace, but it appears that 8% of total community holdings were sold to the wealthy village elite of Rijiya and 17% were pledged. Figures for Sabo are 4% and 10% respectively. In both cases, out-migration was not a major option. No families from Sabo migrated; in fact, several youths from Niger actually migrated to the village. However, twenty or so males left to take up menial laboring tasks in a local administrative center. It is clear that the different economic strata within the two villages responded in rather different ways. The poor resorted to the sale of livestock, pledged farms, incurred debts, borrowed grain at usurious rates of interest and attempted to sell their labor. The rich bought livestock at deflated prices, purchased the scarcest resource of all, namely land, on their own terms, in some cases sold grain in a seller's market, and, as irony would have it, supported horses and donkeys as others waited for the slothful efforts of the State relief organizations.

The Nigerian Federal and State Governments mounted a relief program in response to the reports of severe food shortage. While it is clear that the amounts of grain distributed were large (0.145 million tons), the problems confronting provisioning were almost insurmountable. On the one hand, the effort was late from its inception and faced enormous logistical and manpower difficulties. Inequities and "irregularities" in the distribution procedures were well documented, storage was deficient, decision-making was overcentralized and, perhaps inevitably, there was an overreliance on local tax records in lieu of proper statistical and demographic information. On the other, these constraints pale into insignificance in light of the magnitude of the populous actually at risk. A population of between 8.1 and 10.4 million faced starvation. The relief budget was only about $ 60 million (van Apeldoorn, 1977). In practice, therefore, the famine victim's direct relief benefit was minimal, in the order of 13 kilograms of grain for the "average victim" in Kaduna State for the 1973–74 period. In Rijiyar–Tsamiya the total grain relief during 1974 lasted barely one week, and for the entire two year duration, Sabo District, with a population of over 168,000 received a total of 6000 bags.

Clearly, then, throughout the north, the burden of famine was born in large measure by the peasantry themselves. This is all the more remarkable – although the long-term implications are less heartening – in view of the demise of some aspects of the moral economy outlined earlier, most particularly the decay of redistributive norms and the buffering roles of descent and communal work groups. More crucial for our purpose, however, is the general feeling among many disaster victims that the 1972–74 situation was not a case of genuine famine in the sense that the great famines of the past, the *babban yunwa*. Rather, they feel that the tragedy was largely man-made. In Sabo village, the claim frequently reiterated was that the suffering was created by grain traders manipulating a below average harvest, a proposition that was paid testimony to by the fact that unlike 1913–14 when people had money but no cereals, 1973 was characterized by availability of grains (albeit at grossly inflated prices) but a shortage of cash.

Naturally, the growth of population has contributed to food and self-sufficiency problems. At the end of the nineteenth century, for instance, Sabo district contained much uncultivated bush, but by 1978 farmland is extraordinarily scarce, and almost impossible to buy, while the population has at least doubled since 1951. To a certain extent, these pressures have been offset by a sort of Geertzian involution through the application of more manure to farm plots which as increased productivity per unit area. Here, too, however, access to manure is closely correlated with wealth and, despite the ubiquity of small livestock used principally as investments against calamity, it is the poorer farmers who suffer. Rural inequality, in other words, is reflected in the inflexibility of some households such that they cannot or are prevented from responding adequately to stress. In conclusion, I would like to discuss briefly three facets of the political economy of Sabo village which partially explain the vulnerability of certain sections of the community to climatic variations, their inability to respond to food shortages, and the enormous difficulties associated with reconstituting their households in the aftermath of famine.

(1) The Grains Trade

The poor peasantry who have to make use of the credit network suffer with respect to the grain trade by virtue of having to sell grain at harvest time either to cover dry season ceremonial expenses or to repay debts. Thus, not only is the peasant selling cheap but he subsequently buys dear with money borrowed at usurious rates from grain dealers who have bought grains cheaply after the harvest. Participation in the credit network, for the poor at least, often has a permanent quality particularly if debt repayment is confounded by poor harvests. In this way, an initial loan agreement may escalate over a period of several years into land pledging, mortaging and possibly outright land sale.

(2) Incipient Landlordism

One of the principal ways households heads attempt to alleviate the attenuating circumstances of preharvest scarcity, especially in view of the historical decline in rurally based crafts, is through dry season irrigation. Here, too, chronic land shortage has prevented access for a large proportion of farmers and, unlike the upland farms, landlordism and farm renting is much more common. In the case of irrigation, which swells enormously when the millet harvest has been poor, almost 50% of the plots are rented. This phenomenon is not simply indicative of rural differentiation along lines of relative wealth but rather expresses new kinds of relationship. Patronage and kinship naturally color landlord-tenant relationships but in many cases are relatively impersonal and transitory. Interestingly, the payment of rent, in which the tenant pays the landlord a proportion of the produce, is frequently denied and is conceived as a "borrowing" agreement. Those of the poor who can gain access to irrigation tracts seek to overcome seasonal shortages through rental but at risk of compounding their indebtedness. This tends to be the case because debts can be repaid with the peasants' *labor-power* during the wet season. The result is that immense scheduling problems are created which frequently culminate in the debtor postponing his own planting and weeding activities.

(3) Monetization, Ceremonial Obligations and Inflation

In a situation in which collective security has been undermined, it is not unusual to discover that many farmers enter into exchanges with the capitalist economy in order to develop and ensure economic security. The development and security of the household, which consists of the reproduction of the domestic relations of production, takes three forms: (i) the extension of the household to generate the necessary labor-power, (ii) the creation of alliance through marriage and ceremonial exchange, and (iii) the production of commodities and the sale of labor to purchase the necessary manufactured goods and marriage goods. In this manner obligatory ceremonial expenditures, assume great social importance at the level of the household but are now extraordinarily expensive in relation to the annual income of the poor. Marriage for example, which cost $ 2–4 at the end of the nineteenth century and $ 4–10 in the early 1940's, had inflated to $ 120–160 by 1966–67 and had topped $ 700 in Sabo in 1978. Indeed, currently the *annual* ceremonial expenses such as naming ceremonies and gift exchange are usually in excess of $ 100 for the middle peasantry.

Furthermore, in a society in which biological life-cycle is pre-eminent, it is clear that during middle age the householder could easily face marriage expenses which over an eight or ten year period could, at current prices, exceed $ 3,000. These expenditures frequently necessitate large scale borrowing, and it is perhaps not too surprising that one of the principal motives for land sales and pledging is to cover marriage expenses. Insofar as these ceremonial expenditures are characteristic of the dry season, they weaken the peasant's resistance to seasonal vagaries and contribute to further indebtedness.

The position described for Hausaland is clearly not unique and is generalizable to other West African regions. The dynamics of the food situation in the Sahel, for example, especially the land scarce regions, can be illustrated by the work of Wilhelm in Upper Volta. Wilhelm (1976) describes the heavily populated Mossi plateau country south of Ouagadougou where maize, millets and sorghums are grown for subsistence with groundnuts, cotton and tobacco providing the cash income. The harvests no longer guarantee self-sufficiency in foodstuffs and the smaller peasant households purchase proportionally more than the wealthier counterparts. The poorer households are, in fact, characterized by a greater likelihood of distress sales immediately following harvest when prices are lowest. Such sales are usually motivated by the need to fulfill tax requirements and repay debts. The repurchase of cereals later in the dry season when prices are often artificially inflated. Broekhuyse's (1974) study of the Mossi plateau shows that 50% of farm revenues is spent on taxation and ceremonial obligations and that roughly the same amount was spent on repurchasing millet and sorghum. The somewhat fictional grain surplus is bought by merchants from Ouagadougou whose provisioning dominates the reallocation of surplus and which supplies the countryside from urban stocks during the dry season. Surplus is simultaneously extracted through coterminous networks of grain trade and credit which, in situations of calamity such as drought, ultimately results in the loss of land, out-migration, or, at best, clientage.

The general picture of food systems in the Sahel would, therefore, indicate that the grain traded through indigenous marketing systems is not a "surplus" in the biological sense of that which would be required to feed a domestic group, but rather represents that part of the harvest which the farmer is obliged to sell in a monetized economy. These sales invariably necessitate later repurchase prior to the new harvest at inflated prices. Inequalities are thus generated between those who are forced to sell and rebuy and those capable of buying and storing as required. The marketing system is parallel to a credit system which exploits seasonal variations in production and cash requirements. The farmer who is only just self-sufficient at best, may require cash for millet or ceremonial or taxation expenditures and will borrow from the grain merchant using the upcoming harvest as collateral. The merchant therefore "buys" cheap and sells dear and the poor peasant has little choice other than to do the obverse. Government intervention in the grains trade has apparently only accentuated the power of the private traders over producers and increased the negative role of the market probably because it has failed to appreciate the connection between the credit and marketing networks.

CONCLUSION

Famines are pre-eminently social crises. Following Marx, crises can be seen as instances in which the internal dynamics of systems are thrown into sharp relief. In pre-capitalist situations, this is frequently manifested as an underproduction of use-values which contrasts with a peripheral capitalist situation characterized by an overproduction of exchange values and the limited development of the relations of production. This view has much in common with recent studies on the relationships between famine and dependency theory but such abstract formulations often neglect the fact that the proper locus of study is the functioning of the productive and distributive system at the local level in historically specific circumstances. Until development programs acknowledge this particular facet of the etiology of hunger, the attempt to lift the poor peasantry from potentially disastrous situations will be doomed to failure. Four years after the Sahel famine, during which time the aid budget has increased enormously, the region is as vulnerable as ever as the 1977–78 season shows. In this respect the aid programs are as much a disaster as the plight of the peasantry themselves.

REFERENCES

Ahmed, M.L. (1976). *Socio-Cultural Organization and the Sharing of the Impact of a Natural Hazard,* B.A. thesis, Ahmadu Bello University.

Apeldoorn, Jan van (1977). *Drought in Nigeria,* 2 volumes. Center for Social and Economic Research, Ahmadu Bello University.

Beach, D. (1977). "The Shona economy: branches of production," in R. Palmer and N. Parsons (eds.), *The Roots of Rural Poverty.* University of California Press, pp. 37–65.

Broekhuyse (1974). *Developpement du nord des Plateaux Mossi,* 4 volumes. Amsterdam: Institut Royal des Tropiques.

Faulkingham, Ralph (1971). *Political Support in a Hausa Village, Niger,* Ph.D. dissertation, Michigan State University.

Hill, P. (1977). *Population, Prosperity and Poverty; rural Kano 1900 and 1970.* Cambridge: Cambridge University Press.

Lovejoy, P. "Plantations in the Economy of the Sokoto Caliphate," *Journal of African Studies* (forthcoming).

Nicolas, G. (1966). "Une forme attenuée du potlatch en pays Hausa: le dubu," *Cahiers de l'ISEA, Economies et Sociétés,* (10).

Palmer, H.R. (1908). *Changes in Taxation in Katsina Division,* File No. Katprof. 1289, Kaduna: National Archives.

Palmer, H.R. (1911). *Kano Annual Report 1910.* Kaduna: National Archives (NAK), SNP 10, 951p.

Raulin, H. (1964). "Techniques et bases socio-économiques des sociétés rurales nigérienne," *Etudes Nigériennes,* Paris: CNRS, no. 12.

Raynault, C. (1975). "Le cas de la région de Maradi (Niger)," in J. Copans (ed.), *Sécheresse et Famine Du Sahel.* Paris: Maspero, Vol. II, pp. 5–42.

Scott, J. (1976). *The Moral Economy of the Peasant.* New Haven: Yale University Press.

Slobodkin, L. and Rapoport, A. (1974). "An optimal strategy of evolution," *Quartely Review of Biology,* 44: 181–200

Shenton, R. and Freund, W. (1978). *The Incorporation of Northern Nigeria into the World Capitalist Economy,* seminar paper, Ahmadu Bello University.

Smith, M.G. (1967). "A Hausa kingdom: Maradi under Dan Baskore," in Forde, D. and Kaberry, P. (eds.), *West African Kingdoms in the Nineteenth Century.* London: Oxford University Press, pp. 112–115.

Watts, M. *A Silent Revolution: Famine and Hunger in a Sudano–Sahelian Region,* Ph.D. dissertation, University of Michigan (forthcoming).

Wilhelm, L. *Rapport 1976 socio-économique de la région de Kambassarri,* unpublished manuscript, Ouagadougou: INSERM.

Wolf, E. (1969). *Peasant Wars of the Twentieth Century.* New York: Harper and Row.