

Food Insecurity and Livelihood Systems in Northwest Haiti

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Introduction

Haiti declared itself an independent nation-state in 1804, following a path traced by the United States of America 28 years earlier in a hemisphere that European colonists dubbed the “New World.” The time gap between Haitian and American independence around the turn of the nineteenth century is no less significant than the approximately 1000 km separating the two countries at the approach of the twenty-first century. Brute facts of history and geography suggest the differing cultural, socioeconomic, and political trajectories that are possible in a global system where nation-states aspire to sovereignty, self-sufficiency, and equality amidst the bonds of dependency and hierarchy.

Today, those differing trajectories give rise to disturbing truths and seemingly incorrigible stereotypes. The United States--large, wealthy, and powerful--styles itself “the leader of the Free World” in all matters political and economic. Haiti--small and powerless--is stigmatized not only as the Western Hemisphere’s poorest country, but also as a country perpetually in “crisis.” The dangers of mixing truth with stereotype notwithstanding, the contemporary Haitian crisis is real and, in large measure, it is a crisis of rural livelihood systems.

Signs of long standing poverty and political inequality in Haiti abound; chronic malnutrition being one. During the last 30 years, per capita daily caloric intake has hovered between 1,900 and 2,100 calories--only 85 to 90 percent of the recommended daily allowance (USAID/Haiti 1995:1). Food production and distribution problems underlie malnutrition. Although Haiti is widely considered a food-deficit country, national production data are too sparse to support the claim that the deficit reflects production shortfalls. It appears that levels of food production, and access to food supplies, vary considerably among regions of rural Haiti and within them. Clearly, however, livelihood systems in much of the countryside are faltering under the burden of complex material and organizational constraints.

The countryside, *andeyò* to rural and city folk alike, lies “outside” spheres of national political-economic power: *La République de Port-au-Prince* and other cities or towns. Rural livelihood systems undergo a cycle of chronic and acute crisis, while power holders and policy makers ignore connections among the cycle’s causes or fail to sustain efforts to assist rural populations to break the cycle. As a result, rural livelihood systems no longer provide many localities, households, and individuals with appropriate and adequate food. Gardens farmed by resilient peasants increasingly yield less food, fishermen-farmers or farmer-fishermen do not obtain enough food from the sea, market places manned by energetic and thrifty market women often distribute food inequitably, and people who ply sundry trades in conjunction with farming or fishing do not earn enough money to buy

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food consistently. As things stand, then, the intersection of problems on the supply side and the distribution side leaves most Haitians facing food insecurity.

This paper is based on a study that collected detailed information on a range of topics from 1,400 households in 42 localities across Northwest Haiti. These localities are located in seven communes: Anse Rouge, Baie de Henne, Basin Bleu, Port de Paix, Mole Saint Nicolas, Jean Rabel and Bombardopolis.

Haiti, the poorest country in the Western Hemisphere, has long experienced chronic malnutrition. Per capita daily caloric intake has varied from 1,900 to 2,100 calories per person over the last 30 years--only 85-90% of the recommended level (USAID-Haiti 1995:1). It is clear that in many parts of Haiti, adequate and appropriate food is not available to many individuals and localities: people cannot produce it on their farms or catch it in the sea, and they cannot earn enough money to buy it. Levels of food production appear to vary, and access to food differs substantially, among regions and within them. Yet, the combination of inadequate food supplies and inaccessibility of food to those who need it means that Haiti faces significant food insecurity.

Haiti's political and economic situation has worsened since 1991, as de facto governments have risen and fallen. Trade with the rest of the world was limited by an OAS and UN embargo until October 1994. The embargo was not strictly maintained until the end of the period, and its effect on food supplies was not clear-cut. However, signs of increasing malnutrition and child mortality, noted over the past ten years, sharply increased during 1993-94 (USAID-Haiti 1995:3).

Organizations seeking long-term solutions to food problems in Haiti have identified detailed information on local food security conditions as one of their most pressing needs. In 1993, a number of organizations started work to establish a reliable base of accurate food security information in Haiti. CARE is the organization with the greatest presence in the Northwest Department of Haiti; thus, it undertook the data-gathering and -analysis project reflected in this paper.

Household food security (HFS) is often defined as the "capacity of a household to procure a stable and sustainable basket of adequate food" (Maxwell and Frankenberger 1992). In this definition, three factors are important: the stability, sustainability and adequacy of a food supply. The food should be adequate in terms of quantity and quality to compose a diet to meet the nutritional needs of household members, and should be culturally acceptable. Stable access is assured through various mechanisms that enable the household to procure food supplies across seasons and transitory shortages.

Theoretical Issues Related to Food Security

"Food security," for purposes of this paper, means "access by all people at all times to enough food for an active healthy life" (Maxwell and Frankenberger 1992). This paper explores relations between and among four key concepts of that definition:

- (1) access and entitlements--whether households and individuals may acquire adequate food when and where it is available;
- (2) nutritional sufficiency--not merely whether a pre-determined amount of food is available, but whether particular kinds of food are accessible in sufficient quantity to allow people to live healthy, active lives;
- (3) security--which embraces risks to a household's or individual's access to food, as well as actions designed to manage or overcome those risks; and

(4) timing--the seasonality of production (hence cash income) versus the steady rhythm of consumption--as a critical factor for assessing risk and vulnerability, and for planning remedial action.

Food insecurity may be transitory (i.e., a temporary and irregular occurrence) or chronic (i.e., a routinized, cyclical pattern). However, what is transitory may become chronic, and irregular occurrences sometimes evolve into cyclical patterns. Theoretically, poverty, household vulnerability, and undernourishment may be distinct conditions. Yet, in practice, these conditions intersect and overlap: poor households are usually most vulnerable to transitory and chronic food insecurity, hence they are often undernourished (Maxwell and Frankenberger 1992: 8-17). This has been the case for half a century in Haiti.

Food security in Haiti, therefore, is a complex matter, and reliable information on factors that create and sustain it in rural Haiti is rare. Haitian peasants and other rural dwellers are vitally concerned about the availability of food, forms of access to it, and its quality. Indeed, these aspects of food status symbolize the distinction between poor and rich households. Yet food security is only one of a rural household's objectives; a fact which food program design must always take into account. Making a living and making a life are distinct but related endeavors.

Given the range of household objectives and assets associated with those two endeavors, this paper examines food security as a dynamic output of livelihood systems. Livelihood systems encompass means, relations, and processes of production, as well as household management strategies. The resources and values of specific physical and social environments determine the character of livelihood system components. Cyclical activities through which households seek to meet their socioeconomic needs differ from activities they undertake to help weather crises. Livelihood systems and strategies, in other words, must be distinguished from coping or survival strategies. As "normal" conditions become more erratic, however, strategic actions and systemic functions begin to merge.

Livelihood systems combine production systems, based on the nature, extent and quality of means of production available to the household, with strategies for management and use of resources, in order to construct an ongoing livelihood for the household. The traditional means of production in agricultural communities, land and labor, are managed in increasingly complex ways as pressures on land intensify and livelihoods that rely primarily on land grow more vulnerable. In addition to land and labor, access to capital, in the form of money, ownership of tools, access to credit, and levels and areas of knowledge and skills condition the options that households have to construct a livelihood, either from farming or from other activities available to them. Diversification of the resource base and of management strategies now constitutes a central feature of livelihood systems in Northwestern Haiti, a region facing severe agro-ecological and economic strain. The notion of "strategies" employed by the region's households, however, must be conditioned by a recognition of the highly limited set of options within which they must "strategize." Opportunities for diversification, already limited for the people of these areas, are further contracting under heavy exploitation.

Livelihood strategies refer to activities that constitute a regular cycle of the household's quest to meet basic needs, and coping or survival strategies refer to measures resorted to in situations of crisis or especial threat. However, it is being found that as "normal" conditions become more vulnerable, the two are beginning to be less distinguishable. In Northwest Haiti, sale of livestock, once an emergency measure

(livestock was traditionally regarded as a form of savings) is now an integral part of the livelihood system, regularly carried out to meet annual expenses such as those of children's schooling, and also, increasingly, to meet household food needs. This trend is doubly significant in a context where livestock is much more scarce than previously. When a household had several head of cattle, the sale of a cow did not constitute a serious decapitalization, whereas it does today when very few families have cattle any more, and those who do have rarely more than one head each.

Worth noting here is that food, though certainly important, is only one of the factors that drive households to make decisions that affect their livelihood systems, weigh competing interests and adopt risks in production systems. Preservation of livelihood assets may often take precedence over fulfilment of food needs in the short run, and people will often go hungry for a period of time in order to save seeds for planting, purchase inputs for cultivating their fields or to avoid having to sell an animal. When land and livestock begin to be sold to fulfill the food needs of the family, it implies an acute exhaustion of options or an enhanced level of desperation in the situation.

Estimates in the 1990s suggest that Haiti's annual food supply shortfall is roughly 350,000-400,000 metric tons in wheat flour equivalents (USAID/Haiti 1995:1). However, knowledgeable observers argue that, given the paucity of institutional infrastructure for collecting production data at the local level, there may be no food deficit at the national level. Still, signs of food insecurity are widespread. According to a 1986/87 survey, more than half the population (57%) earned less than the minimum income requirement for a stable, food-secure life. Of those Haitians, 80 percent consumed less than the recommended minimum daily calories (PAHO/WHO 1994:24). Since then, the combined effects of political turmoil, economic disruption, and environmental degradation have continued to undermine food security (Smarth and Balutansky 1991). Per capita income declined from US\$390 in 1988 to US\$250 in mid 1995, while in 1990 daily per capita consumption of 1,900 calories dropped to 1,700 (USAID/Haiti 1995:2; Baro et al. 1994:72).

Other evidence attests to Haiti's bleak livelihood security profile. Extensive malnutrition afflicts the nation's children. Malnutrition, according to IHE projections, is a co-factor of the most common causes of infant mortality: diarrhea, respiratory infection, and tetanus (Baro et al. 1994:72, 77). A significant decrease in employment opportunities as a result of internal political turmoil and external sanctions has had a negative impact on urban and rural populations. The impact on urban populations was direct: the number of jobs in factories, domestic service, and the public sector declined, or politics curtailed access to them. The impact of sanctions and turmoil on rural populations was indirect. Households in the Haitian countryside enjoyed few non agricultural employment opportunities prior to the 1991-94 political crisis, but they often depended on remittances of money or goods from emigrant household members for survival or a modicum of comfort.

Faced for decades with deteriorating ecological and economic conditions, peasants have attempted to diversify livelihood systems anchored by farming, and recent political instability and economic dislocations have accelerated that quest. Petty commerce and charcoal production have been the main avenues of diversification for several decades. Peasants pursue those occupations under the same ecological and institutional conditions as farming, however, and therefore confront similar problems of sustainability (Mintz 1961, 1964; Murray 1993; Smucker 1981). Likewise, drastic alterations of consumption patterns cannot be sustained. Wild plants, once food substitutes during hard times, are now

regular dietary items for many peasant households several months a year. Unfortunately, in many localities, erratic rainfall diminishes supplies of wild plants (Baro et al. 1995:Ch. 9). Maintaining secure livelihoods and food supplies has been an uphill battle for the Haitian peasantry, as well as the urban lower and middle classes, since long before the post-Duvalier political crisis or the advent of the dictatorship. Yet an especially desperate situation has emerged since 1991, as the concern for livelihood and food security has become enmeshed with efforts to escape the political repression of a nascent democracy. Accelerated rural asset depletion has been a major result of protracted crisis, some observers report, while according to others, crisis-related stress has generated stultifying pessimism or apathy (personal communications). This paper attempts to place the crisis and its immediate effects in the broader context of fundamental constraints on livelihood and food security in the Southern Peninsula and opportunities to overcome them.



Food security is only one of the goals of poor people, so other objectives must be kept in mind when designing development programs. In this spirit, this paper examines food security as a dynamic output of livelihood systems. Livelihood systems are mixes of production systems and management strategies that households design based on their own resources as well as others available to them, with the goal of building a sustainable livelihood for the household. These strategies, however, in many cases are chosen from a very limited set of options. A livelihood comprises the adequate stocks and flows of food and cash to meet basic needs (Chambers 1988). Livelihoods can be made up of a range of

on-farm and off-farm activities which together provide a variety of procurement strategies for food and cash.

Livelihood security may be seen as a precondition of household food and nutrition security. Households are food and nutritionally secure when their livelihoods are sustainable. Food security is a subset of livelihood security; food needs are not necessarily more important than basic needs or aspects of subsistence or survival within households. Food insecure households juggle among a range of requirements, including immediate consumption and future capacity to produce.

It is clear that food insecurity is widespread. A 1986/87 survey showed that more than half the population -- 57 percent -- earned less than the minimum required for a stable, food-secure life. Of these people, eighty percent ate less than the recommended minimum daily calorie level (PAHO/WHO 1994:24). Given the chaotic political situation since then, this picture can only have worsened, as the per capita income declined from US\$390 in 1988 to the current US\$250, and daily caloric intake per person dropped from 1,900 in 1990 to 1,700 today (USAID-Haiti 1995: 2; CARE 1994:72).

Other signs confirm the dim food security outlook: extensive child malnutrition, a dramatic decrease in employment opportunities due to the country's political turmoil and the international trade embargo, and depletion of land resources by people desperate for secure livelihoods and food supplies. Many Haitian farmers have searched for alternatives to agriculture over the past ten years due to drought, soil degradation and poor economic and political conditions. But commerce and charcoal production have also proven unsustainable due to a lack of supporting market structures and inputs. Wild plants which in the past served as fall-backs in hard times now constitute large portions of the diets of many households. The Child Health Institute found malnutrition to be the second most common cause of child mortality after the combination of diarrhea, respiratory infections and tetanus (CARE 1994:72, 77).

Factors Influencing Food Security

A region's food security status results from the complex interplay of available resources, livelihood strategies, the political situation which governs the use of resources, and the effects of development work. Analysis of food security in Northwest Haiti requires information on both national factors which affect the Northwest and regional factors.

1.Resource Base and Livelihood Strategies

The Northwest is Haiti's poorest region. Its population is largely agricultural and much of its land is dry, with an average annual household income of about US\$400. Its rather fragile resource and asset base has been undermined by a number of events and trends since at least the 1970s: significant environmental deterioration, declining agricultural production, droughts (continuing from 1986, very severe from 1991 to 1993, but relieved in 1994 by the best rains in 30 years), cyclones, and floods (particularly in 1971 and 1985). These events have helped sustain periodic epidemics and high rates of chronic malnutrition. Residents of the area have responded by migrating in large numbers to Haitian cities and overseas -- sometimes temporarily, sometimes permanently -- by consuming "famine foods" and by changing their livelihoods, for instance from family-based agriculture to charcoal production. These mechanisms have helped Northwest

Haitians cope with a deteriorating resource base, but in some cases what were meant to be temporary survival measures have become long-term changes in livelihood.

Environmental deterioration is not limited to the Northwest; rather, it is part of a larger pattern affecting all of Haiti. Fertile land has always been scarce--some sources hold that only 20 percent of the country's land is cultivable (PAHO/WHO 1994:6). Recent land use practices, however, have accelerated environmental deterioration. By 1978, 12 of Haiti's 30 major watersheds were completely deforested. Due mainly to this deforestation and over farming, the amount of arable land in Haiti has been estimated to have declined by three percent annually between the 1940s and the 1980s. This means that by the end of the 1980s there was only 30% of the arable land that existed in 1940. This is even more catastrophic when considered alongside a national population which increased by 1.8 percent annually in recent decades, and of which 65 percent depended on agriculture for income by 1988 (CARE 1994:75-76).

Some environmental deterioration is independent of human hands. Extensive droughts since the mid-1970s have crippled agriculture in many areas, particularly the Northwest. Droughts have left good soil exposed so that it is washed away when the rains return. They have also pushed farming households to pursue other livelihoods, including charcoal production which has been responsible for significant deforestation.

Deforestation, in turn, has forced households to spend increasing amounts of time scrounging for fuel wood, resort to other fuel sources, or go without. With the poor living conditions and the drought of the 1990s, raw materials for charcoal production have shifted from branches and trees, now long depleted in many areas, to roots, the procurement of which is a much more labor-intensive process that also eliminates future wood supplies. The absence of pasture has also left livestock weak and underfed, so that many die due to cold or wet weather, diseases and predators (often dogs). Much of the land in the Northwest is very degraded, and as the majority of farming systems rely on rainfed agriculture with few inputs, harvests have been dwindling to almost nothing in many areas.

The people of the Northwest lack access to many inputs and structures necessary for effective agricultural production and food security. Among their basic needs are roads to obtain inputs and to market products; improved water supplies; better health care facilities; access to appropriate short-maturing seed varieties and other farming inputs; and animal health services (CARE 1994: 73-74). In the absence of this infrastructure, and facing an eroding agricultural base, the people of the Northwest have seen their livelihood options shrink and returns from almost all local production decrease. They have had to rely more and more on revenue from migrant relatives.

2.Current Political Situation

The successful implementation of interventions to increase food security will depend on a stabilization of the Haitian political scene. It is still too early to tell what the June 1995 elections will mean for the socio-economic status of Haitians in the Northwest, but the end of overt military and paramilitary violence at least keeps open the possibility of a political process which will help meet people's basic economic and nutritional needs.

The RFSA noted that since 1986, "the sociopolitical situation in Haiti has been chiefly characterized by radical change, uncertainty, and misery" (CARE 1994:14). Their consequences have included the loss of thousands of jobs as export industries collapsed under the combined weight of political instability and the embargo, the virtual bankruptcy of the state, and an inflation rate that rose to 40 percent in 1993. Access to food supplies

was reduced by a simultaneous decline of workers' purchasing power and production, resulting from the breakdown of infrastructure and diminished availability of inputs.

3. Development Interventions

Chronic and acute food needs in the Northwest will continue to require international relief for some years. Building food security, however, will require the strengthening of the capacity of local organizations to represent community interests. New livelihoods should be explored; traditional reliance on agriculture and charcoal production must be supplemented, for instance, by salt production, deep-sea fishing and production of substitutes for fuelwood (CARE 1994:29).

Haiti has received considerable foreign assistance, including food aid from the USA, Canada and the European Economic Community. Foreign assistance also has included projects to rebuild infrastructure and improve sanitation while creating employment, water supply projects, work in agriculture and health, and organizational development. Agriculture projects in the Northwest have included erosion control, bio-intensive gardens, introduction of disease-resistant crop species and improvement of farmers' knowledge of market conditions. Health projects have included child survival, medicine supply, basic curative care, prevention of drug abuse, and both clinical and community-based family planning.

Vulnerability of Rural Households: Seasonal and Chronic

Haiti's households offer a picture of chronic vulnerability to livelihood system failures and food shortage. Access to livelihoods outside agriculture is poor; of those in rural areas who are able to attend school, only ten percent complete the sixth grade. Living conditions threaten health constantly; only 59 percent of rural people have access to safe drinking water and a mere 16 percent have latrines. Vaccinations and basic preventive and curative health services are unavailable to many. The rate of contraceptive use is nine percent, one-fourth of that in Haiti's neighbors.

The results are horrifying. Haiti's infant and child mortality rates are 101 and 151, respectively, per thousand births, rates near those of many sub-Saharan African countries. The immediate causes of death are diarrhea, pneumonia and measles--preventable childhood diseases which underlying under nutrition and poor birth spacing turn into killers. Maternal mortality, in turn, is 300 per 100,000 births, compared with 100 in neighboring Dominican Republic. Life expectancy, 54 years, stands at just two-thirds of that in many of Haiti's neighbors. Almost half of all households eat less than 75 percent of the recommended number of calories, and 36 percent eat less than 75 percent of the recommended amount of protein (CARE 1994:16-17).

The 1994 RFSA team found several significant indicators of vulnerability: access to production assets; overall household size and, specifically, number of children; exposure to seasonal and climatic factors affecting production; and gender of household head, with female-headed households more vulnerable than male-headed ones. The groups most vulnerable to food insecurity were children under age five, pregnant and lactating women, the elderly and the chronically ill. The team found that local food distribution privileged the vulnerable. "In times of scarcity," their report noted, "these particular groups receive priority in feeding, even when the more productive household members go without" (CARE 1994:23).

Both the 1994 RFSA and the current baseline showed seasonality as a strong influence on vulnerability to food insecurity. Transportation is hampered in the rainy season, as only a very low proportion of Haiti's roads are paved. Fishing is highly seasonal. In some irrigated areas, farmers traditionally plant dry lands when they expect good rains. The RFSA found that no such season had been expected, and thus no dry-land crops planted, since 1978. Rather, these lands had been used for charcoal production.

Table 1 shows mortality rates in the study area by agro-ecological zone and locality. These rates represent the number of deaths in the year 1993-94 per thousand persons in the study sample. Comparison with crude death rates in other low-income countries reveals that the figures for the study area are extremely high. In 1991, the average crude death rate for low-income countries was 10, and the figure for Haiti as a whole was 13 while Haiti's neighbor, the Dominican Republic had a death rate of 6 per thousand. The death rate of 22 in the sample surveyed in Northwest Haiti is close to the deaths recorded in Ethiopia (21) and Mozambique (19), where, in 1991, famine and political crises created an emergency situation provoking international attention. High mortality in Northwest Haiti results from the exacerbation (since 1991) of already precarious living conditions by recurrent droughts, acute food insecurity and famine. The political crisis of the last four years led to a collapse of the economy and serious deterioration of the physical and social infrastructure, including rural health services. The figures on mortality highlight the extreme vulnerability of the study area's households to unfavorable changes in the economic and political environment.

Table 1. Mortality Rate by Agro-ecological Zone (1993-1994).

Agro-ecological zones	Mortality Rate (Deaths per 1000)						
	Overall	Male	Female	0-7	8-35	36-55	>55
Island Dry	14.0	8.9	5.1	1.3	2.6	2.6	6.4
Humid	18.0	11.8	6.1	3.5	5.3	1.3	7.5
Plateau Dry	25.1	15.1	10.0	6.8	9.7	1.4	6.1
Coastal Dry	27.0	7.0	19.9	5.9	10.6	7.0	3.5
Irrigated	31.2	12.7	18.6	7.6	6.8	3.4	9.3
Total	22.2	12.0	10.2	4.9	6.9	2.4	6.7

Considering mortality rates by agro-ecological zone, we find the highest proportions of deaths in the irrigated zone, followed by the coastal dry zone and the dry plateau. The inland dry zone has the lowest rate. In terms of age-specific death rates, however, the coastal zone shows the highest proportion of deaths in the age groups 8-35 years and 36-55 years while in the irrigated zone, the majority of deaths occur among those over 55 years. Thus in the coastal zone, despite high average household incomes from fishing, the incidence of death among older children and young to middle-aged adults is disproportionately high. High mortality among children under the age of 7 in the irrigated zone and the dry plateau is also noteworthy. Malaria as a possible cause of death in all age groups in these zones calls for investigation.

Table 1 also draws attention to the fact that male mortality is significantly higher than female in the whole sample and in every zone except the coastal and irrigated. Once again, it is important to investigate closer the causes, both of the high male mortality in the sample, and of the especially high female mortality in the coastal and irrigated zones.

Comparison of Livelihood Systems in Northwest Haiti

Northwest Haiti exhibits a pronounced mix of production systems, with greater or lesser degrees of mixture depending on the region's agro-ecological attributes as well as the means of production, resource endowments and socio-economic characteristics of households. The principal sources of livelihood are agriculture, animal husbandry, fishing, charcoal production, small commercial enterprises and artisanship. The vast majority of households have a mixed livelihood base, combining agricultural and non-agricultural activities. However, agriculture is the real base of the mixed livelihood systems in these zones, with fishing providing the only major alternative, and only in the coastal zone. Of the entire sample, only 12 percent of households invest absolutely no labor in agriculture. This does not however preclude the possibility of these households earning revenue from land that they may have leased out or given for sharecropping. Given that a large proportion of cultivators do not own the lands they occupy, but work them under sharecropping or lease-hold arrangements, this is a strong possibility. The percentages of households with nobody working in agriculture are equally small in all but one of the agro-ecological zones: only in the coastal zone does the proportion reach 47 percent (see Table 4). In other words, nearly half of the households in the coastal zone have no labor invested in agriculture. The lands in this zone are extremely poor in vegetation and soil nutrition and are highly eroded, making agriculture viable only with substantial inputs.

Table 2. Livelihood Activities by Agro Ecological Zone.

	Irrigated	Humid	Dry Plateau	Inland Dry	Coast
Agriculture	++++	+++	+++	+++	+
Livestock	+++	+++	+++	+++	+++
Fishing					+++
Artisanship		+	++	++	
Charcoal	+	+	+++	+++	++
Key					
+	Marginal Activity		+++	Widely Practiced Activity	
++	Secondary Activity		++++	Predominant Activity	

Table 2 profiles the concentration of different production systems in the five zones studied, while Table 3 records the percentages of people engaged in the different activities, by agro-ecological zone and locality.

Both tables indicate the mix of various systems of livelihood in every zone. Agricultural production is clearly important as a livelihood, but its significance varies between the zones, from being central in the irrigated zones with all other activities in

secondary positions, to the dry zones where production is by no means as central. Livestock production is an important complement to agriculture in all zones. In the humid zone, commerce (including the manufacture and sale of charcoal) also plays a large role. In the dry zones (both plateau and interior), cropping covers large areas but is less and less important in terms of production. Nor does livestock rearing, principally involving goats, donkeys and fowl, constitute a major source of household income. On the other hand, charcoal production occupies a prominent place and artisanship is also important. The range of options, from agricultural wage labor and non-agricultural employment (including construction and road-building jobs where available) to commerce, are much more vigorously pursued in this zone.

The coastal zone specializes in fishing, with livestock raising and charcoal production as supplementary sources of livelihood. Commerce is an important activity in this zone as in most of the others.

Table 3. Percentage of HH income by occupation and agro-ecological zone

Zone	Percentage of households earning income from				
	Agricultural Production	Agricultural Wage Labor	Non-agricultural Activities	Commerce	Crafts and Artisanship
Inland Dry	92.1	47.9	39.3	76.4	12.4
Humid	87.3	39.1	34.6	65.9	11.6
Plateau Dry	88.1	42.0	39.9	72.5	16.0
Coastal Dry	86	5.8	60.3	75.0	14.7
Irrigated Plain	96.4	19.3	40.4	51.8	12.1
Entire Sample	89.4	36.2	40.5	69.3	13.6

1. Agricultural Systems

Agriculture in the region is predominantly rainfed, with the exception of the Trois Rivieres basin and some irrigated pockets of land. Irrigated land accounts for only a minor proportion of the total sample area, and is concentrated in one zone. Reliance on rainfall introduces a strong component of risk into farming, more marked where rainfall patterns are erratic. In a region characterized by frequent, severe and prolonged droughts uncertainty of harvests is a built-in feature of the farming systems, generating patterns of land and crop management designed to contain heavy losses. Harvests in dry areas are so uncertain that sale of standing crops, a means of obtaining emergency liquidity, is not an option available to households. In many localities in the dry zones, for example, collective memory traces the last good harvest back to 1978, and in other localities, to 1986. It was repeatedly asserted in these zones that good harvests can be expected only once every four years. Whole localities in the survey report having received no income from production in the last year.

Even in irrigated zones, risks have significantly increased in recent years: risks of diminished water flow, of siltation in irrigation channels, and of difficulties in access to fertilizers and pesticides. In Lavaltiere, for example, irrigated area has reportedly

decreased from 63 ha to 10 ha, while water flows have diminished from 85 l/sec to 7 l/sec. Irrigated plots of land available to households in these areas are tiny, and they are often forced to lease or sharecrop additional plots at high rates from absentee landowners, or cultivate rainfed plots at some distance away. Farming here, involving inputs of seeds, fertilizer and water, requires some purchasing power and access to credit, which are not widely found. Alternative livelihood strategies based on wage labor and charcoal production are pursued in this zone as well.

In the humid zone, heavier rainfall and some rainfed irrigation from the Trois Rivières makes it possible to extend the growing season and to plant a third season in some localities, but here the frequent flooding of the Trois Rivières basin and increasingly erratic rainfall patterns render farming only slightly less uncertain than in the dry zone.

Agriculture in the Northwest involves both cash and subsistence crops. The principal cash crop in the irrigated and humid zones is plantain and, in the dry zones, peanuts. Subsistence agriculture, producing mainly for home consumption, is based on cereals (sorghum, maize, sesame), legumes (red, black and white beans, pigeon peas and Lima beans), and tubers (manioc and sweet potato).

Table 4. Percentage of HHs without agriculture by agro-ecological zone.

Zone	% of HHs with nobody employed in Agriculture
Inland Dry	8.6
Humid	8.6
Plateau Dry	6.4
Coastal Dry	47.1
Irrigated Plain	10.8

The two categories of crops are by no means mutually exclusive: beans and cereals are often sold in the market, and plantains consumed in the home. Some “banking” of produce also occurs, whereby a household may put its cash crops on the market when prices are favorable, and then purchase the same crop for consumption when market prices fall. The two categories of crops are not strictly separated in production systems either: they are almost always cultivated together on a plot of land. Households generally attempt to cultivate the whole range of species possible in their agro-ecological conditions, wherever their resources in terms of amount of land and purchasing power to buy seeds permit.

Facing a risky environment, and in a context of rainfed agriculture with few external or technical inputs (except in irrigated areas), households tend to adopt risk-minimizing agricultural strategies. Such strategies include dispersal of plots on different types of land if possible, seasonal movements between hilly and plain areas, or between dry and humid zones, and intercropping at the level of the field.

Table 5 shows the kinds of crops that are cultivated in the five zones and the prevalence of intercropping. The figures reveal that by far the largest proportions of plots across all zones are intercropped with maize, beans, and “viv” in combinations of two or three of these crops. The proportion monocropped is small in most areas except in the irrigated zone, where about 15% of the land is mono-cropped with “viv,” here chiefly referring to plantain. In the inland dry zone, combinations of sorghum and maize, or sorghum, maize and beans account for the largest area cropped, followed by intercropping of beans with

sweet potato and manioc. In the humid zone, dry plateau and the coastal zone, however, intercrops of beans and manioc or sweet potato constitute close to a quarter of the area cropped. In the coastal zone, monocropping of any one species is marginal; even the 9% of area that purportedly grows “only *viv*” often represents an intercropping of cassava, sweet potato and perhaps some plantain where irrigation is available. A small amount of monocropping of peanuts as a cash crop occurs both in the inland dry zone and in the dry plateau.

Intercropping may be achieved through crop rotation and/or through spread or staggered time-frames. For example, in the dry zones, after harvesting sweet potato in early May, the household may plant manioc in mid-May, and sow maize and Lima beans. At the end of May, after clearing the field and harvesting the Lima beans, pigeon peas and sometimes sorghum, manioc and sweet potato are planted again. Pigeon peas sown after the maize harvest replenish the soil and also constitute a source of ongoing production until the new planting season begins. Sorghum is often sown on a section of the field set aside for that purpose.

The strategy in the humid zones is not very different. An earlier planting season (March-April) and species that need more water, such as green beans, form the skeleton of the multi-cropping system employed in these zones. Sweet potato and manioc are sown in June after the bean harvest. This scenario is also found in the cadastre lands where, a month after the sowing of peanuts, pigeon peas and Lima beans are planted.

Table 5. Type of crops produced by agro-ecological zone.

Crops	Percent Area Cropped with:				
	Inland Dry	Humid	Dry Plateau	Dry Coastal	Irrigated
Maize, Beans & Viv	6.5	18.7	17.6	35.8	14.1
Maize, Beans & Sorghum	10.6	2.7	3.7	7.5	5.5
Beans & Viv	15.8	21.4	26.9	23.9	12.8
Maize & Beans	5.5	9.2	9.2	3.0	8.0
Maize & Viv	4.0	5.6	5.5	4.5	4.4
Sorghum & Maize	23.7	10.0	5.1	0.0	5.7
Viv & Fruit	3.1	4.4	2.3	1.5	7.0
Beans & Sorghum	3.5	0.7	1.8	0.0	0.4
Only Viv	7.5	9.6	7.1	9.0	13.9
Only Beans	0.9	3.5	2.8	4.5	1.7
Only Sorghum	6.8	1.5	0.5	0.0	1.5
Only Maize	1.2	1.5	3.3	0.0	1.3
Only Peanuts	5.4	0.7	5.7	0.0	4.4
Only Tobacco	1.4	2.5	2.2	3.0	4.4
Only Orchards	0.0	0.2	0.8	0.0	0.4
Other	4.0	7.7	5.3	7.5	14.1
Total	100.0	100.0	100.0	100.0	100.0

In the irrigated zone, however, staggering of crops is less common: plantain, sweet potato, beans and maize are all planted in more or less the same season. To reduce risks, sowing dates are instead spread out within a shorter time-frame. For example, maize is sown on the same plot at three different dates within a one-week interval. The spreading strategy is also applied to particular species: one finds, for example, drought-resistant white beans planted side-by-side with red and black beans on the same plot.

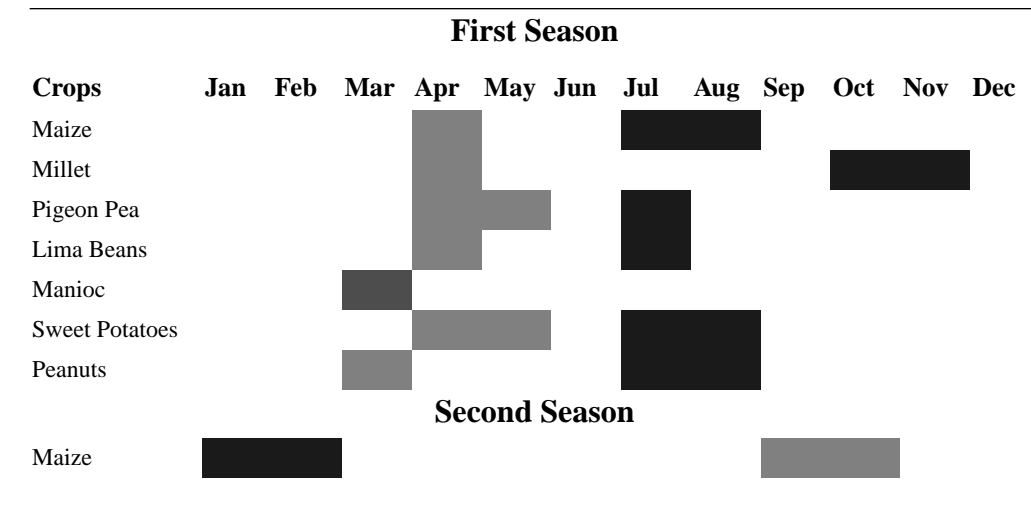
Intercropping is also achieved through combining species varieties with different growth cycles. Thus, three-month, nine-month and twelve-month varieties of sweet potato may be found on one plot. These different species are planted in neighboring ditches and the farmers distinguish them by their vegetation and the appearance of their stalks and leaves. There are also different varieties of manioc: at least three varieties may commonly be found in one field. These strategies are found across all the zones, and are intended to provide the farmer with continuous harvests spread out over the year.

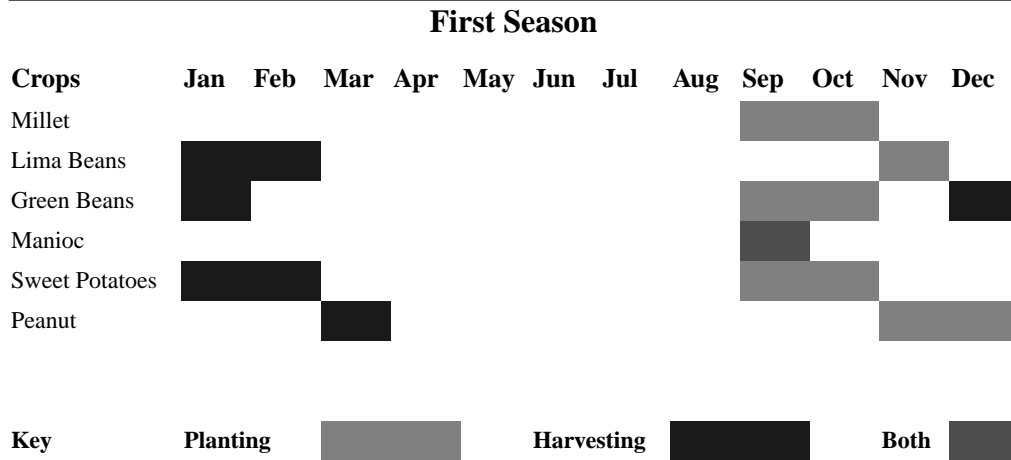
The species principally involved in these strategies are sweet potato in all agro-ecological zones, manioc mainly in dry zones, and beans in humid zones. Among beans, white beans are more commonly cultivated as they are more drought-resistant and also because their leaves are edible. Red beans and black beans are not only more vulnerable to drought but their seeds are also more expensive.

Monoculture in small-scale farming is found only under exceptional circumstances. For instance, peanuts may be monocropped in very dry sections of the cadastre where other crops would be difficult to cultivate. Also, “photoperiodic” sorghum is found alone at the end of its vegetation season, as the competition for soil occupancy and for nutrition would be too great for intercropping.

The Northwest has three growing seasons. In a normal year, the first begins in March-April, the second in September, and the last in November. The onset of the rains is a key factor in determining the seasons. In the irrigated zone, the calendar is very flexible, with planting dates spread throughout the year. The dry zones do not have a third season, whereas in the humid and irrigated zones, the third planting season is given over exclusively to bean cultivation. (See Figures 1, 2, 3 and 4 for the agricultural calendars of the main crops.)

Figure 1. Planting and Harvest Calendar in the Inland Dry Zone.

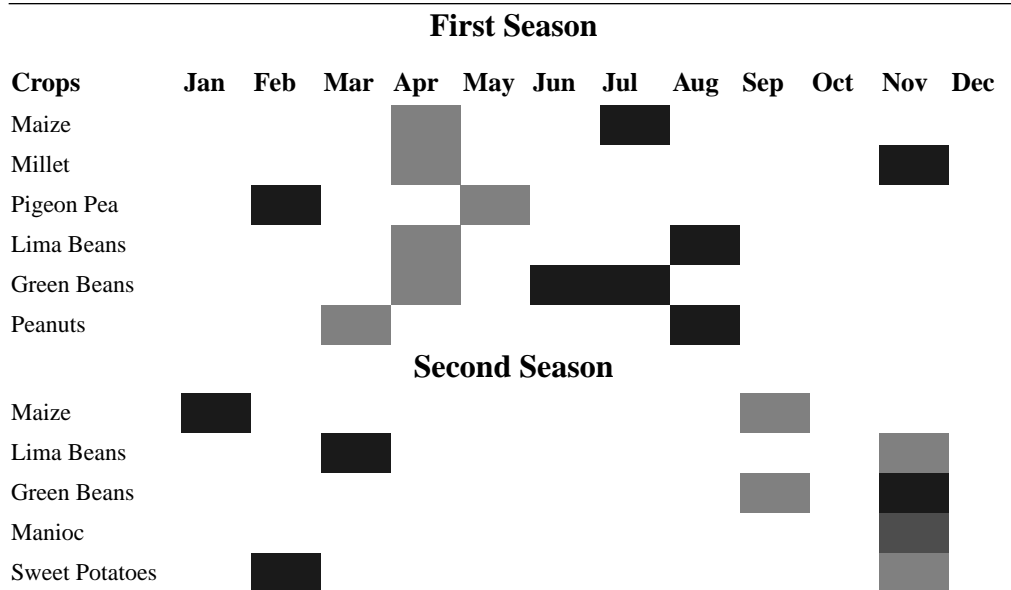




A feature of Haitian peasant production strategies that merits mention is the *jaden lakou* or courtyard garden. Houses in the Northwest are situated in lakou, or courtyards, either alone or with other houses that may constitute sub-units of the same household or may belong to co-heirs of a plot of land.

These pieces of land are frequently planted with vegetables, herbs and fruit trees in a closely intertwined system. The system integrates livestock, for example, by using their manure for fertilization. Kitchen wastes are also added to the soil. Key informant interviews revealed that the *jaden lakou*, where found, forms an important component of the food and livelihood systems of households in the Northwest. This is particularly true in cases when the garden has been handed down over generations, where soil fertility has already been built up and fruit trees exist.

Figure 2. Planting and Harvest Calendar in the Plateau Dry Zone.



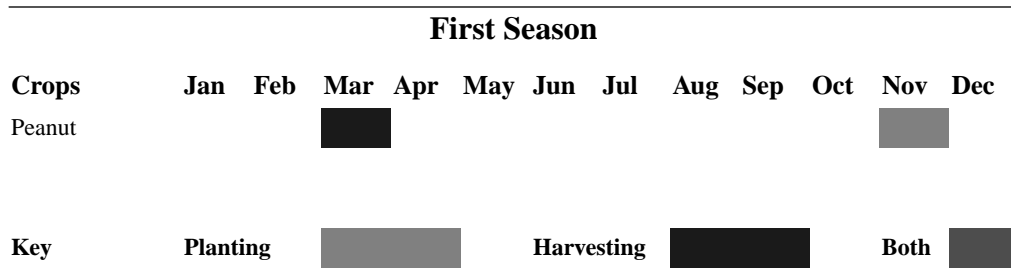
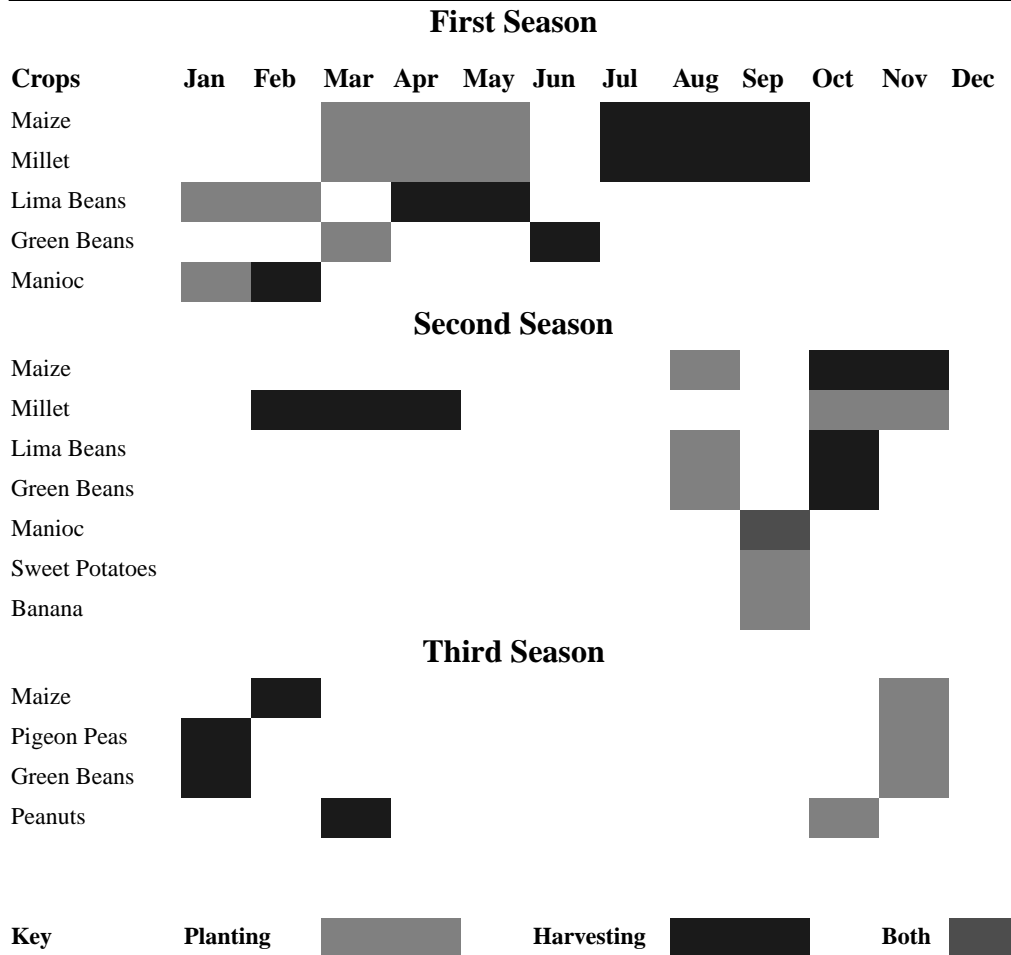
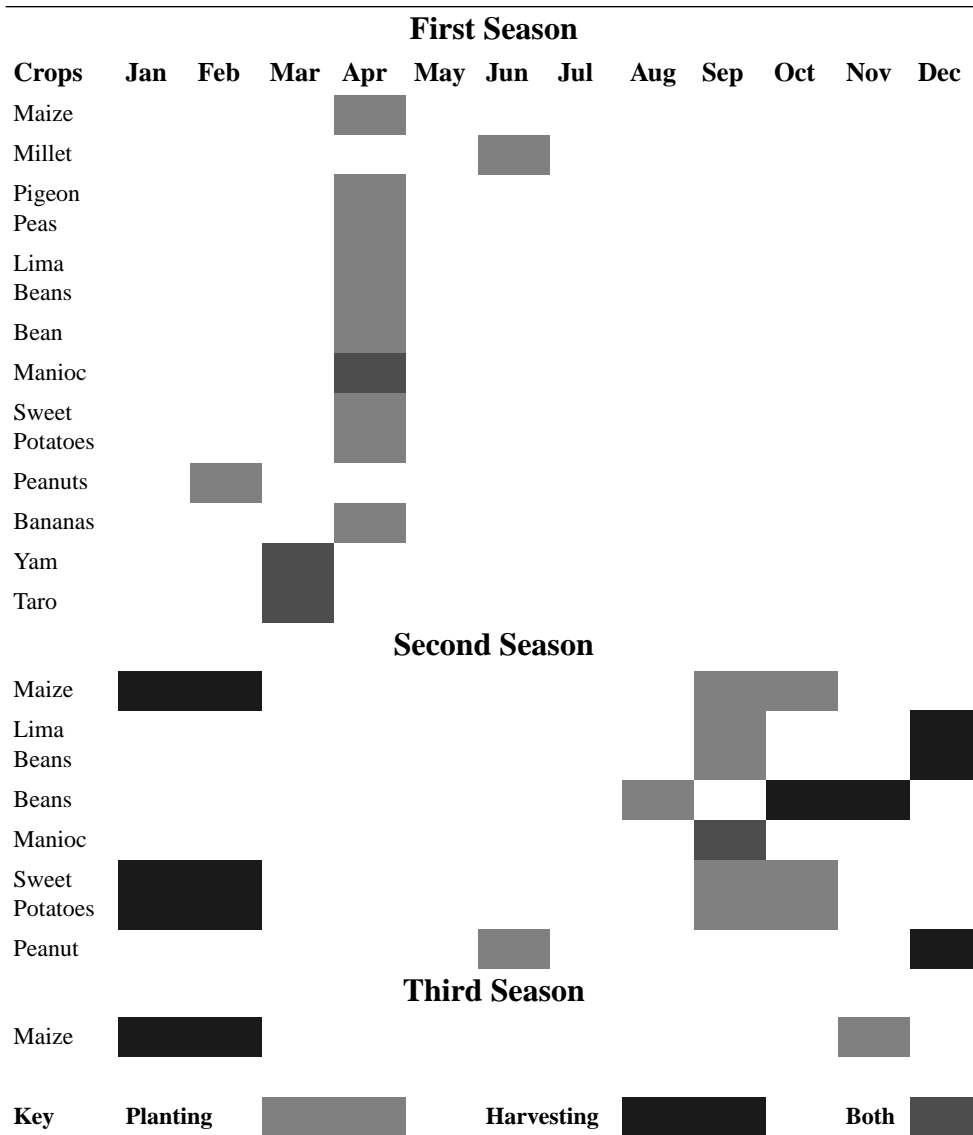


Figure 3. Planting and Harvest Calendar in the Irrigated Zone.



Labor is principally provided by the family in the majority of farming systems of the Northwest, especially in the dry areas. Women perform various tasks in the field, such as broadcasting seeds, weeding and harvesting, while clearing and preparation of land, digging and planting are usually done by men. Thus, despite the widespread involvement of women in farming systems, residents of the surveyed localities regard the presence of male adults as crucial for successful cultivation of a household's lands.

Figure 4. Planting and Harvest Calendar in the Humid Zone.



However, the role of the work groups such as the *kwadi* and the *konbit* is marked; they provide a major source of agricultural labor on the basis of unpaid exchange rather than cash payment: i.e., the group works in rotation on the fields of each member, reducing the need for regular sale or purchase of labor. Women provide meals for the group when it works on their households' plots.

Wage labor is frequently practiced in the study area, but its incidence is unevenly distributed. The small-scale systems of the dry zones offer few opportunities for wage labor. In localities close to humid or irrigated zones, where there is greater demand due to the number of planting seasons, and somewhat more intensive farming systems, these

opportunities are greater. People generally opt against selling their labor in their own localities, as they consider it demeaning to work for wages on the lands of their neighbors. The work-groups offer an acceptable and convenient way out of this problem.

2.Livestock Raising

Livestock raising, always an important strategy in the Haitian peasant economy, has moved even further center-stage in recent years with intensifying pressures on land.

Animals, especially pigs and cattle, traditionally constituted one of the principal forms of durable assets in the economy. Their life cycles can straddle periods of scarcity and periods of plenty, and their reproductive capacities cause them to appreciate in value. In contrast to land, which may be held under joint tenurial forms or may be inalienable for a variety of reasons, livestock are easily transferable and relatively accessible in terms of cost to rural households. The multiple use-values of animals and their favorable exchange-values make them a convenient form of savings and a source of considerable wealth for farmers.

Livestock also serve as intermediate assets in the acquisition of other capital goods. Animals are purchased when affordable and then fattened and sold to acquire land or to construct houses, and more recently, to finance the emigration of household members to the United States. Of the sampled households that reported livestock sales in the past year, around seven percent sold animals to buy land, pay off debts, or purchase materials to construct a house, and five percent to finance migration. Livestock sales also provide crucial liquidity in emergencies such as illness or death, and, increasingly, they pay for children's schooling.

Most striking however, is the shift in significance of livestock in the Northwest's household economies in the 1990s. Traditionally a highly valued means of savings and asset-generation, it has now become a major source of basic livelihood for households in all zones. The survey shows that, by far, the most common reason for livestock sales during 1993-94 was to feed the household (32% of the respondents). This is one of the most telling indicators of the intensifying crisis of livelihood systems in the region.

The Northwest's principal livestock species are the smaller ruminants--goats and sheep--along with cattle, donkeys, pigs and fowl. Pigs were the most common form of livestock until 1981, when USAID and USDA implemented the African Swine Fever Eradication Program. Most of Haiti's indigenous pigs were exterminated and, over ten years later, the study area's population, like Haitian peasants elsewhere, still remember the "slaughter of pigs" as a traumatic event. Efforts to propagate a new hybrid species of swine have largely failed in the Northwest, and pigs have been replaced, to some extent, by goats and sheep physically, if not economically. Given the notoriously voracious foraging tendencies of goats, this constitutes yet another threat to the already precarious vegetative cover in the region.

Table 6 shows the distribution of households involved in livestock raising by locality and agro-ecological zone. It illustrates that the vast majority of the study area's households raise animals: 65 percent of the overall sample, and over 75 percent in some localities.

Livestock are most common by far in the humid zone, where, on average, over three-quarters of the households raise animals, and over 90 percent of households in localities such as Savanne Marc and Cabaret do. The availability of fodder, owing to more extensive rainfed vegetation in fields, as well as open pastures and common grazing areas, makes this possible.

Table 6. Distribution of HHs with livestock by locality and agro-ecological zone.

Zone/ Locality	Percent of HHs Raising Livestock	Zone/ Locality	Percent of HHs Raising Livestock	Zone/ Locality	Percent of HHs Raising Livestock
Inland Dry	56.6	Plateau Dry	65.5	Coastal Dry	63.2
Bois des Nègres	77.1	Ka Philippe	81.8	Anse-A- Chatte	75.0
Grand Platon	78.1	Grande Savanne	90.9	Jean Macoute	79.4
La Gorge/ Reval	00.0	Bebe	75.8	Carenage	28.6
Fond Zombi	38.2	Dos d'Ane	84.4	Haut Fourneau	71.4
Nan Fosse	94.1	L'Echange Colette	82.9	Irrigated Plain	66.2
Savane Rase	87.9	Plateau Bois d'Orme	00.0	Lavaltiere	91.4
Piagon	71.8	Terre Rouge	87.5	Sauvale	81.2
Grand Fond	06.1	Ravine Galette	00.0	Bazin	00.0
Humid	73.4	Fond Lema	78.8	Fond Coq	75.0
Goimbert	61.8	Nan Saut	77.1	Ka Trakas	84.6
Laurent	00.0	Poirrier	00.0		
Lacoma	84.4	Vieille Terre	88.9		
Dessources	77.8	Gelin	82.3		
Cabaret	90.6	Bon Pays	90.3		
Ka Jourdin	78.8				
Dolcine	78.1				
Bony	81.8				
Duga	77.4				
Grivo	79.4				
Savanne Marc	96.9			Entire Sample	65.7

Key informant interviews indicated that livestock raising plays a marginal role in the irrigated areas. However, the data contradict that assertion, showing instead that with the exception of Bazin, which has no livestock at all, 75 to 91 percent of the households in localities of the irrigated zone raise animals. Similarly, in the coastal zone, except for Carenage, the poorest locality in the sample from that zone, over 75 percent of all localities have some animals. Goats, pigs and fowl predominate in this zone, whereas cattle are virtually absent owing to the extreme aridity.

In dry areas, goats, donkeys and fowl are widespread, but the poorer localities such as Ravine Galette, Plateau Bois d'Orme and Grand Fond have none. The availability of lands with some grazing potential and the extent of vegetation in common grazing areas are clearly factors that affect the capacity of households to raise livestock. About half of those who had livestock in the entire sample claimed to obtain their fodder primarily from their own lands, while about 25 percent relied mainly on common grazing lands, the "savanne" and trees and shrubs found by roads and ditches.

Table 7. Type of Livestock owned by sample households.

Type of Livestock	Percent of HHs with Livestock	Average Number of Livestock per HH	Total Number of Livestock per HH
Horses	9.6	1.13	152
Donkeys	41.6	1.24	582
Cattle	12.5	1.25	219
Pigs	12.3	2.12	364
Sheep	28.4	2.18	867
Goats	50.4	2.91	2057
Fowl	56.5	6.31	4994

Table 7 shows livestock holdings by type and number per household. Cattle, horses and pigs, reported by approximately 10 percent of households in the sample, are relatively rare, whereas about half the households have goats, and close to a third have sheep. Fowl are by far the most common of all livestock categories, with over 56 percent of households possessing some.

Donkeys are also common and play an important role in agriculture and related livelihood systems. They are used not only to transport crops from fields to houses, but also to transport goods from houses to market places for sale, especially by women involved in small-scale retail activities. A woman without a donkey, hence immobile, considers herself handicapped in commerce. The emphasis that female respondents in the survey placed on possession of a donkey was extraordinary.

Table 8 details household livestock data by type and zone. The overwhelming majority of cattle, the region's "elite" livestock, is found in the irrigated zones, where close to a quarter of households possess at least one cow or bull. The average number of cattle per household is about one for the entire sample. In Ka Trakas, however, household report an

average of 3 head of cattle. The humid zone exhibits the second highest concentration of cattle (15.5% of households). The higher level of savings and greater availability of forage in the humid and irrigated zones make cattle central to livelihood systems in these zones, where they serve as intermediaries in capital accumulation, providing resources, for instance, to buy land, build houses, or emigrate.

Only about 10 percent of households in each of the dry zones have cattle, due to lack of forage and purchasing power. When a household does get sufficient surplus, the money often derives from non-agricultural activities--for instance, teaching or working with the rural police. In the coastal zone, only 2 of the 136 households in the sample owned cattle.

Guardianship (HC: "*gadyenaj*," FR: "*gardiennage*"), an arrangement where an individual or a household takes animals to tend, on bases similar to those of sharecropping, is a common practice. The guardian, in exchange for tending the animal for a year, including providing fodder and veterinary services, gets half of the proceeds if the animal is sold, otherwise his/her payment is half of the offspring.

Guardianship of cattle is practiced in 9.6 percent of the sample households: more than half of those who had cattle gave them out for tending. Some households specialize in cattle-raising, which constitutes a livelihood source by itself for the guardians. Guardianship is most common in the irrigated zones where 21 percent of households sampled pursued this activity. The proportion is less than 10 percent in the dry plateau, inland dry and humid zones; in the coastal zone this practice is rare.

The study shows remarkably high cattle mortality: 128 households reported losing cattle in the previous year. The proportions of loss by zone roughly correspond to the distribution of cattle-owners: 20 percent in the irrigated zone, and less than 10 percent in the other zones.

Sale of cattle is also strikingly high: 125 households report having sold cattle in the previous year, as compared to 173 households who owned cattle at the time of survey. Again, the break down by zone corresponds roughly to the ownership pattern. Sale of calves before birth is also surprisingly high among households that own cattle: 92 of the 173 cattle-owning households in the sample had done so. The proportion of cattle-owning households who practiced sale before birth was the highest in the dry plateau (63%), while it ranged from 41 percent in the humid zone, to 58 percent in the irrigated zone.

This high rate of cattle sales, and of sales before birth indicate conditions of extreme pressure on the asset base. These levels of disinvestment are clearly unsustainable and bode ill for maintaining livelihood or food security.

Donkeys are found in over a third of households in all zones except the coastal zone, and once again, there is an average of one donkey per household. Donkeys given or taken under guardianship represent roughly half of these animals, both across the sample and also in each locality. This suggests that donkeys are not kept simply for their use-value to households that own them, but also for their exchange-value and utility as a means of saving. About half the number of households that possessed donkeys sold mature animals or offspring before birth. The mortality rate for donkeys was as high as that for cattle: 309 households reported losing a donkey in the previous year.

Table 8. Types of livestock by agro-ecological zone.

Zone/ Locality	Ownership of livestock		Percent of HHs that Receive Livestock through Sharecropping	Percent of HHs that Give Livestock through Sharecropping	Percent of HHs with Livestock Deaths in the Past Year	Percent of HHs Sold Livestock in the Past Year	Percent of HHs Sold Livestock Before Birth in the Past Year
	% HHs per zone	Avg. # Live-stock per HH	g (% per zone)	g (% per zone)	per zone	Year (% per zone)	(% per zone)
CATTLE							
Dry Interior	10.9	0.9	7.9	5.6	8.2	7.5	5.6
Humid	15.5	1.3	8.9	7.5	9.4	8.3	6.4
Dry Plateau	9.8	1.1	9.2	6.2	7.7	7.5	6.2
Coastal Dry	1.5	0.0	2.9	2.9	2.2	2.2	1.5
Irrigated Plain	24.1	1.7	21.0	18.1	19.9	22.2	13.9
DONKEYS							
Dry Interior	39.0	1.2	19.1	17.6	26.2	21.7	17.6
Humid	36.6	1.2	16.6	15.8	23.5	19.1	15.5
Dry Plateau	33.1	1.2	16.2	14.9	22.2	17.3	13.9
Coastal Dry	8.1	0.9	4.4	4.4	5.1	5.1	4.4
Irrigated Plain	41.1	1.4	21.1	22.9	25.9	27.7	21.7
HORSES							
Dry Interior	6.0	0.7	3.0	3.0	5.2	4.5	3.0
Humid	12.2	1.1	6.1	6.1	8.6	7.2	5.3
Dry Plateau	8.7	1.1	3.8	3.8	7.0	4.3	3.8
Coastal Dry	2.2	1.0	1.5	1.5	1.5	1.5	1.5
Irrigated Plain	18.7	1.4	10.8	10.8	13.3	13.3	10.8
SHEEP							
Dry Interior	23.2	1.8	16.9	12.4	17.6	16.5	11.2
Humid	35.2	2.4	23.8	19.7	29.9	24.4	18.8
Dry Plateau	25.2	1.8	16.4	14.1	20.5	16.8	14.5
Coastal Dry	15.4	1.6	9.6	11.8	13.2	10.3	8.8
Irrigated Plain	39.8	3.0	27.1	26.5	34.3	33.1	22.3
GOATS							
Dry Interior	46.4	2.9	28.1	21.0	38.6	34.8	22.5
Humid	55.1	2.4	34.1	27.1	45.7	36.0	24.4
Dry Plateau	49.3	2.7	27.1	22.2	42.9	35.0	23.2
Coastal Dry	48.0	4.6	26.5	27.2	39.7	33.1	25.0
Irrigated Plain	51.0	3.7	34.9	33.1	45.2	42.2	28.9
PIGS							
Dry Interior	4.9	1.2	1.1	1.5	2.2	2.2	0.7
Humid	14.1	1.9	8.9	7.5	9.4	8.6	6.4
Dry Plateau	6.4	1.9	4.7	3.8	4.7	4.3	4.1
Coastal Dry	30.1	2.2	13.2	12.5	19.1	14.7	12.5
Irrigated Plain	21.1	3.0	13.3	12.7	15.7	15.7	10.2
FOWL							
Dry Interior	47.9	7.2	25.4	24.3	46.1	34.1	N/A
Humid	67.0	4.9	28.2	28.0	62.6	37.7	N/A
Dry Plateau	59.7	6.3	29.2	28.1	55.9	36.2	N/A
Coastal Dry	30.1	3.9	14.7	13.2	25.0	14.0	N/A
Irrigated Plain	58.4	10.0	28.3	30.1	58.4	40.4	N/A

The goat population among the sample households is huge: about half the households own goats and the average number of goats per household across the sample is 2.9. Although this figure does not vary by agro-ecological zone, some of the poorer localities exhibit far lower averages of goats per household. In Grand Fond, for instance, the average is one, in Goimbert it is less than one, in L'Echange Colette 1.6, and in Carrenage 1.8. Mortality is disproportionately high among goats: 42 percent of households in the sample reported the death of goats in the previous year, and of households owning goats, the proportion that faced a death was 85 percent. This category of livestock appears to be particularly vulnerable, not only to illness, but also, to an extraordinary extent, to attacks by dogs.

Perhaps for these reasons, and in order to ensure better care for livestock, guardianship of goats is also common, involving at least half the number of households that own goats. The incidence of goat sales is also remarkably high: 502 households report having sold a goat, compared to 704 households that own goats. The average number of goats sold per household is about 2.

Pigs are relatively marginal in most areas of the Northwest, except in the coastal zone and in the irrigated zone where about 30 percent and 21 percent of households, respectively, own them. The average number of pigs per household is 2 in the coastal zone and 3 in the irrigated zone. Many of these are the improved hybrid variety introduced by the USA after the swine fever epidemic by the U.S., but reported to have been a failure in the other zones. A very large number of households that own pigs report death of their pigs in the previous year.

Sheep are the most common animals after goats and donkeys. They are found in 28 percent of the sample, but concentrated in the humid zone and the irrigated zone. Households own an average of 2 sheep each. Among these animals as well there is a very high incidence of mortality, from the same causes as for goats: high vulnerability to disease, and attacks by dogs.

Fowl are the most accessible form of livestock in households. They are within the purchasing power of a large proportion of households (56%), and are easier to buy and sell, as well as cheaper to feed than other livestock. Fowl are widespread in the humid zone, where 67 percent of households have them, but more numerous in the irrigated zone, where even though the proportion of households owning fowl is somewhat smaller, the average number of birds is 10 per household, as compared to 5 in the humid zone. Fowl are also numerous in the inland dry zone and in the dry plateau, with 48 percent and 59 percent of households owning an average of 7 and 6 birds each respectively. The coastal zone has the least fowl, reported in only 30 percent of households, with an average of 4 birds per household. Fowl mortality is a serious problem: roughly the same proportion of households in all zones that owned them reported loss of birds.

Fowl sales are very common. About 35 to 40 percent of the households reported sales during the previous year and, on average, each household sold 3 or 4 birds. In the coastal zone, however, only 14 percent of the households reported sales of fowl.

Fodder

According to reports from key informants in the region, animals are tied to posts and left to graze. According to survey data over half (51.4%) of the households who had livestock fed them principally on their own gardens and fields, or on the lands of their parents or neighbors. This suggests a definite relationship between access to use rights on land and the possession of livestock. The proportion that reported grazing their animals on

the “*savanne*” or in common lands, including the banks of rivers, hillsides, woods and the sides of roads, was about 25 percent. About 19 percent claimed to have bought feed in the market, much of it for pigs and chickens. Other sources of fodder, mentioned in much smaller proportions, were kitchen wastes and household food stocks including grain from food aid.

Tending to livestock

When asked who took care of the livestock, respondents, with little variation across agro-ecological zone or the sex of household head, mentioned the head of the household (47.5%), followed by the wife or the person next in responsibility (17.4%). Other tenders of livestock tend to be the first dependant of the household head (a parent or sibling) or the first child (14.7%). This extensive involvement of the household head and other significant household members in livestock care underscores the importance of animal husbandry in Northwest Haiti. There is first-hand evidence that children actually perform the tasks of grazing the animals to a very great extent, while the household head probably oversees their general welfare. Women tend to care for and feed chickens, goats and donkeys.

Livestock morbidity and mortality

Illnesses accounted for 63.9 percent of livestock deaths in the survey area during 1993-94. This fact, taken together with the extremely high mortality described above, makes a pressing case for improved access to veterinary services. As livestock constitutes a prominent part of the livelihood base of the majority of the study area’s households, improving the health and life expectancy of the animals should be a priority. There are at present no effective animal health programs in the Northwest, sponsored either by the government or by non-governmental organizations.

The chief disease affecting fowl is commonly known as “Newcastle,” which becomes endemic every year during March-April and September-October, causing widespread death of fowl. Nearly half the chickens die at the beginning of the agricultural season, just at the moment when households need to sell chickens in order to buy seed. Thus, every six months households have to reconstitute their holdings of fowl.

At the end of the dry period and the beginning of the rains, goats and sheep are affected by an unnamed disease whose principal symptom is diarrhea. Some farmers attribute their losses to an interaction of severe drought and strong rains. Others believe that in the dry period, microbes accumulate to the point that water from the first rains is very polluted. This unidentified disease, however, causes large-scale death among sheep and goats. Another commonly quoted illness affecting these animals is “*rhume*”--influenza, or viral fever, with cold.

Animals frequently die of thirst in the western part of the Northwest. It is not unusual to find cases where donkeys simply die at the end of a long trip, or collapse in the course of a trip and cannot get up. In the far west, the diet of livestock, particularly of cattle, suffers critically in times of drought. Frequent epidemics of anthrax (“*chabon*”) also affect cattle.

Other causes of livestock death indicated by the survey call attention to livestock management strategies. Ten percent of households reported deaths of sheep, goats or fowl due to attacks from dogs, cats, mongoose or large hawks (“*malfini*”). Floods, heavy rains, sun and other natural causes accounted for another 5 percent of the deaths, and an

additional 5 percent of households reported inadequate food as the cause of death. Finally, 5 percent of households lost their animals to theft.

3. Fishing

Although fishing is generally thought to constitute the predominant livelihood activity of households in the coastal zone, survey data suggest that it is not as widely practiced as believed. Only 78 of the 136 sampled households in the coastal zone reported receiving any income from fishing. A variety of factors determine access to a livelihood system based on fishing, chief among them is access to the primary means of production: the equipment. Another crucial factor is labor, particularly the availability of male adults who are essential for fishing given the rigid sexual division of labor in this occupation. Women, however, play a key role in the fishing economy and in transforming the fruit of the sea into household income: they market the catch in local markets, nearby localities or cities in the vicinity.

Localities that engage in fishing reported substantial incomes, certainly much higher than those reported in the agriculture-based zones. However, a considerable amount of fishing is conducted under arrangements analogous to sharecropping, where the owners of fishing equipment receive half the value of the catch, while the other half is divided among the group of fishermen involved in the expedition. Income from fishing also depends on the infrastructure and facilities available for transporting the catch: ferry services, a port, shipping facilities, etc. From localities like Jean Macoute or Anse-a-Chatte, for example, where such facilities are available, fish and bags of charcoal can be transported to Port de Paix. Large shares of the income from both activities are appropriated by the operators of these ferry services.

Another factor brought to light in Jean Macoute was that successful income-earning from fishing also depends on the level of organization that fishermen achieve among themselves, both in terms of their negotiating position vis-a-vis equipment owners or middlemen who transport fish, and the fishing techniques that can be employed.

Although fishing is a year-round activity, the months of highest yield are August and September. From May to August, lack of rain lowers the size of the catch, and from November to February strong winds and violent waves make it difficult for fishermen to put out to sea. This is corroborated by evidence from the survey where the periods most commonly cited as difficult months for food security were May, June, July, November, December and January. The most common reasons given were lack of rain and rough conditions at sea.

Fishing in these localities is primarily of small scale and remains close to the coast for the most part, because technologies for deep-sea fishing are expensive and scarce. The seine (HC: “*senn*,” FR: “*seine*”), a large weighted net, about 400-500 meters long, that can be used for fishing in the deep seas and for trapping big fish, is a resource akin to irrigated land in agriculture. A few relatively well-off people own them, mostly non-fishermen from outside the area. Fishermen have access to them on terms similar to those of sharecropping. Only two or three seines were seen in the sample area. This technology requires about 10 to 15 fishermen to conduct an expedition.

Much more common are the smaller nets (“*file*”), 200-300m in length, and the “*nas*,” a large cage-like wicker trap. Both of these can be taken out to sea on a canoe (“*kanot*”) and the operation requires about 4 men. Small one-person rafts called “*pripri*,” crafted out of a single tree trunk, are also commonly used to fish with lines. Most fishermen possess a line, and *pripri* are also commonly available. Few people own a trap or small net and, when not

in use, their owners often rent them. A seine costs about 1800 gourdes (H\$360), a nas between 60 and 100 gourdes (H\$12 - 20), a *filet* about 450 gourdes (H\$90), and a canoe may cost 1000 to 1500 gourdes (H\$200-300).

Where households have no access to the means of production and labor to take up fishing, charcoal production and livestock-raising are the major alternative livelihoods. This is often the case in female-headed households that have no adult males. Charcoal in these areas is made mostly by drying pads of cactus (“torche”). Income from commerce and retailing, also mostly involving women, is also important in this zone.

4. Charcoal Production

Manufacturing charcoal from wood, a major supplementary livelihood option in the dry zones, is widely practiced in all zones and in every locality, including the coastal and irrigated areas. Reports from key informant interviews in each locality corroborated the data from questionnaires on the significance of charcoal production. In the dry zones, the lands known as the “cadastre” offer the best opportunities for this activity, and in the agricultural off-season, large numbers of male adults migrate there for several months at a time to make charcoal.

Two features of charcoal production, besides its prevalence, are worth noting. First, the deterioration of the resource base associated with it, both in terms of quantity and quality, contribute to a situation of severely diminishing returns to labor. Trees and bushes are no longer available to furnish wood for charcoal. Over the past several years people have been resorting to stumps and twigs, and, recently, to digging up roots in order to continue reaping a desperate livelihood.

Charcoal production from roots requires vastly more labor than production from tree or bush branches. Digging roots is a substantial operation in itself, and organizational forms such as root-digging co-operatives (“*konbit*”) have sprung up around this work.

It takes twelve men a full day each to produce four sacks of charcoal, which sell for about 36 gourdes each, amounting to 12 gourdes per person for an eight-hour work day. Sharecroppers receive only 6.50 gourdes per day. These amounts are less than the returns of a day’s labor in agriculture (up to 20 gourdes for two “*bout*”). The price of charcoal has remained more or less constant, bringing diminishing returns to work. Even more serious is the trend toward ultimate depletion of the resource: once the supply of roots is exhausted, this activity, which constitutes a major source of supplementary income to such a large proportion of households in this region, will become a thing of the past.

The second striking feature of this activity concerns the relations of production associated with the raw material: the roots. Rules governing access to these resources are similar to those applying to land tenure relations, especially when the roots are taken from private lands. Arrangements of the sharecropping type are often in force, whereby the owner of the land gets half of the proceeds from the sale of the charcoal, while the other 50 percent is shared among those who have collected the roots, manufactured and marketed the product. Specialized branches of production have emerged, again around the production factors available to particular groups. A market for roots has developed. Local financiers and moneylenders have shown an interest in commercial transactions with the producers, extracting substantial proportions of the proceeds in exchange for providing access to the raw materials. Competition among such financiers also contributes towards keeping charcoal prices low, invariably at the expense of laborers, who are mostly migrants from the dry agro-ecological zones in a desperate search for livelihood. One also finds sales and purchases of “standing crops” of roots (“*vant sou pye*”), the same way that

maize is sold by financially strapped farmers in the Northwest and in other parts of Haiti. It was remarked that the current conditions of production--digging up roots--has had a negative impact on health. Back ailments have become common in the cadastre.

Along with the production of charcoal from roots of logwood and gaiac trees and from twigs, an inferior variety of charcoal is produced from branches of fruit trees, especially mango trees in the humid zones. The price of charcoal from roots was 40 gourdes a sack in September, while that from branches sold at 14 gourdes. In the coastal zones, a good-quality charcoal is made of torche, the pads of a type of old cactus.

5. Commerce

The importance of commerce as a source of livelihood in the Northwest, particularly in the poorer zones, was emphasized in all portions of the baseline study, from key informant interviews, to the household survey and direct observation. As Table 3 shows, commerce now engages up to 69% of households in the sample. In the table, the category "commerce" includes charcoal production and sale, but one can take the figures to apply very strongly to the entrepreneurial activities of women in the retailing business. In some localities of the inland dry zone key informant interviews revealed that about 53 percent of women were engaged in commerce. As the table shows, these activities are somewhat less important in the irrigated zone and the humid zone, where agriculture is more central, and very important in all the three dry zones. In some localities such as Piagon, Nan Fosse and Gelin, commerce has become a pillar of the livelihood system.

Access to credit is a key factor facilitating successful operation of these small commercial enterprises, but as the activity has spread among poorer households, other strategies have been developed enabling wider participation in commerce.

Wholesalers, for example, may work with a network of women who function as intermediaries, on the basis of trust. The wholesalers, popularly known as "madanm sara," supply local women with produce on credit. The women retailers walk through the markets, a basin full of merchandise on their head, until everything is sold. They then meet and obtain more merchandise from the madanm sara, continuing the process until the end of the market in the afternoon, when accounts are settled.

Those who have access to capital, either their own or (most often) borrowed, can purchase products like rice and flour, and then tour the markets with their donkey, retailing the goods. They cover large distances, and devote four or five days per week to this business. In the coastal zone, commerce is even more vigorous, as capital from the sale of fish is channelled into this activity, and demand for products such as sugar, cigarettes, and "klerin" (a raw, white rum made from sugar-cane syrup) is high.

Despite the heavy recourse to this form of livelihood generation, particularly among women, its profitability, never very high, is diminishing even further possibly due to the severe contraction of purchasing power among the population of this area. Repayment of loans used to finance commerce often entails divestment of livestock or forces some women to migrate temporarily to accumulate money by working as domestic servants in the cities.

For the most part, however, this activity is still, and increasingly, the lifeblood of the household, especially in hungry times (periods of "*soudure*") and in the dry zones. One commonly encounters male heads of household who wait helplessly for their wives to return from the market, often late at night (eight or nine o'clock), for their first and only meal of the day.

Some women, having nothing to take home, wait for the markets to end so they can gather scraps left behind. This is common in the localities close to Jean Rabel (Fond Zombi, Bazin), where some women specialize in gathering these residues of the market to feed their households.

The extreme mobility required by commerce, and the market women's lengthy absences from their homes, has negative effects on the care and nutrition of young children, and even on their older siblings who must often stay home from school to tend the young children.

6. Artisanship

Artisanship involves not only traditional crafts and manufactures of the area, but a variety of small services such as repairs of tires, farming equipment, metal utensils, sharpening of knives and machetes, carpentry, welding, and sewing. Although these trades are essential in the economy of these areas (maintenance of farming tools, for example, is greatly lacking in the dry zones), their scope is highly limited, due to a shortage of both capital and skills needed to initiate them. Table 3 shows that in all agro-ecological zones, only a very small proportion of households are engaged in artisanship.

One form of artisanship more commonly practiced in the Northwest is the manufacture of rope, straw mats ("*nat*") or baskets ("*makout*") from latanier or other locally available material. These manufactures are carried out primarily by women and older people during periods of difficulty. The returns on their labor are meagre: one makout, for example, requires at least three eight-hour days, and sells for 11 gourdes. The chief constraint in this craft is difficult access to raw materials, particularly in the dry zone.

Thus, although these craft goods-- baskets, mats and rope--are widely used in all spheres of life in the region, the poor returns and difficulties in obtaining raw materials do not encourage many households to turn to artisanship as a livelihood source. This is a situation worthy of attention in an area where the bulk of household and farming utensils, equipment and articles of convenience were traditionally provided by local artisans.

In the coastal zone, the manufacture of fishing equipment, such as the nasse, nets and the pripi provides a somewhat more substantial livelihood base. In Haut Fourneau, 37% of the population earn income from this source.

7. Migration.

Although migration cannot be termed a source of livelihood in itself, it represents an important set of conditions under which livelihoods are earned or supplemented in Northwest Haiti. Out-migration has become an integral part of the economic and social dynamic of the region, and is built into the livelihood strategies of a substantial number of households. On average a quarter of all households in the sample reported receiving income from emigration in the preceding year, and the actual number of emigrants in the period of survey was 1110. Table 9 shows that the rate of out-migration has doubled in comparison to the past, as it gets harder to earn an adequate livelihood from the area. As in the case of livestock, there are indications that households are beginning to rely on migration of their members, not just as a recourse in emergencies but as routine support for meeting basic needs.

Table 9. Past and Present Emigration Rates by Categories of Land Ownership.

Category of Land Owned (ha)	Households		% Labor Force Off-Farm	% Labor Force Currently Emigrated	% Labor Force Emigrated in the Past
	No.	%			
None	315	18.7	18.3	26.3	13.8
0.01 - 0.25	127	9.1	22.1	32.3	16.6
0.26 - 0.50	244	17.4	21.6	30.2	14.7
0.51 - 1.00	301	21.5	20.6	30.3	13.8
1.01 - 3.00	322	23.0	20.6	26.7	12.3
3.01 - 5.00	57	4.1	23.5	19.3	10.0
> 5.00	33	2.4	18.9	18.8	5.8

The table also indicates a relationship between ownership of land and rates of migration. There is a strong positive correlation between past migration and current land holdings (0.7163) and a strong negative correlation between current migration and current land holdings (-0.9012) suggesting that past migrants purchased land and a major current reason for migration is land shortage. Indeed a regression analysis would suggest that the two variables “explain” 84% of current land holdings (adjusted R-squared of 0.8435 and an F-statistic of 17.17). Although this general trend is offset somewhat by the higher out-migration to the U.S. from the coastal and irrigated zones (where fishing and intensive agriculture respectively replace extensive agriculture), it largely holds true as seasonal migration in search of labor still accounts for the bulk of migratory movement in the Northwest.

Seasonal migration has long been a strategy adopted by households to expand their labor opportunities in periods of scarcity at home. The strategy also often permits an accumulation of income that is rarely possible at home; thus the amounts of income reported as coming from agricultural wage labor are much lower than those reported to come from seasonal migration, even though the latter comes chiefly from agricultural wage labor. In other words, persons returning from migration bring home a substantial sum of money all at once, while daily wages from agricultural labor earned at home are small and quickly consumed.

Seasonal migration has two principal avenues: migration to the cadastre lands in the western part of the Northwest, to produce charcoal; and seasonal movements between the hilly and plain lands to benefit from the different agricultural seasons in the two zones.

Migration to the cadastre is most common among male inhabitants of the dry zones, who set up residence in makeshift camps in the cadastre during the period between planting seasons (January-March, July-September) and also during planting seasons, between two agricultural operations. Households from the dry areas have better access to the cadastre due to their proximity.

The hilly terrain of the humid zone accounts for two distinct agricultural seasons: March-April in the mountains and September-October in the plains. Male adults tend to schedule their activities so that they work on the mountains in March-April and in the plains in September-October. In some of the mountain localities where the survey was

conducted in October, almost all the adults had left for the plains. People from the mountains cultivate their own lands in March-April and then lease lands (if they are slightly better-off) or enter sharecropping arrangements (if very poor) in the plains in September-October. The opposite occurs among households in the plains.

Household heads from dry areas also migrate temporarily to humid zones where they sharecrop lands. Again, it is mostly adult males who do this. They may walk six to seven hours from their homes to find work either alone or as part of a *kwadi* or *mazinga*. After having worked for the landowner, they may receive less fertile plots of land to sharecrop. This is part of the strategy of landowners in the humid zones who thereby assure themselves of labor supply when needed.

In the eastern part of the Northwest, migration takes on another dimension. The inhabitants of this region, who emigrated primarily to the United States or in some cases to Canada during the 1970s and 1980s, shuttle between their foreign residence and their community of origin. Many vacation in Haiti for a month every year. They construct modest houses and, by transferring assets to their households, contribute towards raising the standard of living of their communities. They even finance the construction and repair of roads. The emigrants often maintain a social distinction from the local people; at Ka Trakas one finds a luxurious cemetery called the “Diaspora Cemetery” established by people of Duga and Bony now living abroad. Only the emigrants and their close relatives have access to this cemetery.

This pattern of dual residence is found particularly in Bony, Duga, Ka Trakas, Dolciné and Fonds Coq, all localities in the humid or irrigated zones situated not far from Port de Paix. Emigration abroad is also very widespread in the coastal zones, where, in localities such as Jean Macoute, key informant interviews report that almost every household that can afford it has one of their members abroad. *Pran kanté*, or migration by boat to the U.S. requires a substantial amount of money, often raised through the sale of land or livestock, and perceived as an investment in the future welfare of the household. The data, discussed in Table 9 above, indicating that families with a history of past migration are now better off and less prone to migration suggests this investment generally provides a good return.

Conclusion: Politics and ecology as determinants of Food Security

The struggle for livelihoods has led households to explore a vast array of options, employing all the resources available in their environments. It is well-documented that rural communities do not over-exploit their natural resources out of carelessness or ignorance, but because they lack other choices. The clear linkages between poverty and migration discussed above illustrate this point well. Discussions with residents of localities in the Northwest repeatedly revealed the emerging patterns of resource-depletion in most of the avenues that people have pursued as sources of livelihood, from wood for charcoal to grasses for fodder. These discussions also stressed the urgent need for investment in employment-generating projects such as road-building and repairs, infrastructural projects that would move livelihood systems away from continued dependence on occupations that have already been pushed beyond the margins of productivity.

Households in Haiti are often complex structures, with several sub-units. The team found, however, that the household head could be identified relatively easily by

conferencing with community members. Costly, separate efforts to discover the household head's identity were not necessary. In addition, the team found that the additional time and effort required to include and understand the sub-units of a household were well rewarded in terms of understanding the food-security status of the entire household.

A region's food security status results from the complex interplay of natural and human resources, the viability of livelihood systems and survival strategies, the politics of resource allocation and use, and the impact of development interventions. Analysis of food security in Northwest Haiti entails comparison and contrast of agro-ecological, sociocultural and political-economic factors at the departmental, communal, locality, and household levels. Households make critical decisions about the allocation of productive resources. Their demographic characteristics, resource endowments, plans, and strategies constitute important variables in livelihood and food security. However, resource availability and the household decision-making process itself are conditioned by a variety of factors above the household and outside its control. Thus, this report considers household-level conditions in relation to the factors mentioned above.

Haiti's political situation, volatile since at least the fall of the Duvalier dictatorship in 1986, worsened after 29 September 1991, when the military successfully staged a coup against the democratically elected Aristide government. As de facto Haitian governments rose and fell, international sanctions, imposed by the OAS and the UN with U.S. support, made a shaky national economy totter further by interrupting trade with the rest of the world until October 1994. The embargo was not strictly enforced until mid 1994, and black market trade (kontrabann) in all manner of goods and services made the sanctions quite porous. Consequently, the embargo's effects on rural food supplies, as contrasted with supplies of foreign food aid, was not clear-cut. However, food prices escalated as the costs of fuel and other imports skyrocketed in 1993-94 (USAID/Haiti 1995:3). Fortunes were made in the black market, and signs of malnutrition and infant mortality, notoriously high during the previous ten years, sharply increased.

The 1991 coup, an expression of profound lack of consensus in national politics, interrupted the nascent process of democratization of which the 1990 elections were the most highly touted result. The coup unleashed military and paramilitary repression against classes and individuals that formed the Aristide Government's electoral majority, and anyone who appeared to support it. Conservative estimates of politically motivated killings during 1991-94 range from 3,000 to 5,000, with thousands more forced into hiding or exile. The coup's disregard of Haitian law and international law, as well as the repression associated with it, provoked U.S./UN sanctions, generically called lanbago by most Haitians. The dearth of facilities and services in most of the countryside prior to international sanctions make it difficult to assess the embargo's impact on rural Haiti, as opposed to urban Haiti, where it was clearly devastating. However, inflated fuel prices hampered peasants' efforts to obtain inputs and to market their products. They also made it more difficult for CRS and other international organizations to serve their target beneficiaries.

The return of the Aristide Government, and the presence of UN troops, have diminished the level of political violence. However, insecurity endures, as the cost of living remains high and the level of ordinary crime--assault, armed robbery, and praedial larceny--increases. The June 1995 national legislative and communal elections took place after fieldwork for the CRS baseline study was completed. Election results are unknown at this writing, and it remains to be seen whether they will establish legitimate and effective governmental structures at the national, municipal, and local levels.

Sweeping conclusions about the “success” or “failure” of development interventions in Haiti suffer from an “all or nothing” cast of mind, which underestimates the challenges of change and overlooks small steps in the slow process by which change will be achieved. Even “failed” projects may be constructive, if the experiences of personnel and beneficiaries, as well as the reasons for the projects’ results, become lessons for future action. However, it is fair to say that short-sighted and otherwise inappropriate approaches to development interventions have contributed to Haiti’s development debacle.

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Abstract

This paper examines rural livelihood systems in Haiti from both a political and ecological perspective. While political developments in Haiti have taken center stage in most analyses, the environmental impacts of population growth, highly varied livelihood strategies, and migration opportunities appear to have played a major role in the current tragic situation. Illegal migration not only seems to alleviate short term poverty but also appears to benefit households long term as revenues from migration improve households' land holding situation. Nevertheless, the steadily declining ecological situation may already be exceeding the creative livelihood strategies of Haitian producers.

Key words: Haiti, political economy, political ecology, livelihood strategies, households, livestock, agriculture, migration.

Resumé

Cet article étudie les systèmes de survie rurale au Haïti d'une perspective politique et écologique. Bien que les développements politiques au Haïti ont pris la première place dans la plupart des études, l'impact environnementale de la croissance démographique, les stratégies de survie très variées, et les opportunités migratoires ont joués un rôle important dans la situation tragique actuelle. L'immigration illégale semble améliorer la pauvreté à court terme et au même temps semble bénéficier les ménages à long terme comme les redevances améliorent la situation foncière des ménages. Quand même, la détérioration écologique peut déjà surpasser les possibilités disponibles aux producteurs Haïtiens.

Mots clefs: Haïti, économie politique, écologie politique, stratégies de survie, animaux des ménages, agriculture, migration.

Resumen

Este papel examina sistemas rurales de sustento en Haití de una perspectiva política y ecológica. Mientras que los eventos políticos en Haití han tomado un rollo central en la mayoría de los análisis sobre el medio ambiente a consecuencia del crecimiento de la población, las estrategias de sustento que son altamente variadas y las oportunidades de migración aparecen haber desempeñado un papel importante en la situación trágica actual. La migración ilegal no solo parece aliviar la pobreza a corto plazo sino también aparece beneficiar a los hogares en términos de largo plazo mientras que los ingresos generados por la migración son usados para el mejoramiento de la situación de las tierras. Sin embargo, la situación ecológica que continua declinando constantemente puede ser que ya haya excedido las estrategias creativas de sustento de los productores Haitianos.

Palabras claves: Haití, economía política, ecología política, estrategias del sustento, hogar, ganado, agricultura, migración.