allowed to lie fallow for the same period when a rest of 10 to 15 years is needed to fully restore productivity. Decreased soil fertility and increased weed competition are the consequences of a shortened fallow period. The result is that farmers, primarily women, must work longer and harder for ever-decreasing yields. In favored locations, farmers have begun spontaneously to diversify and intensify production. But in vast areas of the northern mountains, few economically viable and environmentally sustainable alternatives to swidden farming exist, so people continue with it despite the low returns.

Biodiversity is also being reduced. Many species of plants and animals are disappearing or becoming scarce. Overexploitation and loss of habitat contribute to this trend. Hunting, gathering, and fishing have provided important supplementary sources of nutrition and income for many upland people, but can no longer meet the needs of growing numbers.

Given the levels of poverty and the depletion of resources, a growing and largely illegal border trade with China poses a significant threat to the environment. The Chinese market for agricultural and forest products—especially certain plants and animals for medicinal purposes or consumption as exotic food—appears insatiable. The price for a bear's gall bladder, an anteater's tail, or certain snakes can equal a year's income for an upland household. The flow of such resources across the border to China may be the principal cause of species loss in the northern mountains today. Effective government control of this trade is virtually impossible.

Numerous other forms of environmental degradation are taking place. Small-scale mining activities pollute local water sources with arsenic and mercury. Dam construction
that provides mainly energy and flood protection to the lowlands submerges precious wet-rice fields. Grossly inefficient factories and processing industries create local water and air pollution.

**Poverty**

In 1994, when the national average per capita GDP of Vietnam was US$260, it was $150 in the northwestern mountains and $70 in the Central Highlands. In vast portions of the uplands, especially the higher mountains, average per capita cash income is under US$120. Thirty-four percent of households in the northern uplands and more than 60 percent in the Central Highlands were classed as poor or very poor with incomes of less than 50,000 dong (US$4.50) per person per month; these compare with 27 percent of households nationally and only 19 percent in the Red River Delta. In the northern uplands and Central Highlands, 56 percent of households were seriously malnourished (consuming under 1,500 kcs/person/day when 2,200 to 2,500 are necessary), compared to just 17 percent in the Red River Delta. But such statistics fail to capture the full extent of rural poverty in the uplands. Poverty is characterized not only by low incomes, but also by lack of access to basic services such as medical care, education, information, and entertainment. Though no reliable statistics are available, there is no question that the people of the uplands receive fewer and poorer-quality essential services than do the inhabitants of the lowlands.

Of course, the situation is not universally grim. Some provinces—those nearest big cities and with the best transportation—have much higher incomes than others. People living along major highways have higher incomes and better access to goods and services than those in remote areas. Kinh are on average doing much better than ethnic minorities, and some minority groups (Tay, Muong) do much better than others (Hmong, Dao). But even the most-well-off upland areas tend to be worse off than average regions in the lowlands.

This is not the full extent of the problem. Many upland people are starting to see themselves as poor and backward. They feel inferior to lowlanders, to foreigners, even to some other minority groups. Lacking money, lacking food, lacking access to natural resources and public services (education, health care, information), they are in danger of losing their most precious resources of all: self-confidence and self-respect. It is not just that they lack cash and access to some of the good things in life. After all, the uplands have always been economically worse off than the lowlands. The problem is that, increasingly, the people are self-consciously feeling themselves to be poor.

**Integration into Nonlocal Systems and the Problems of Dependency**

Until recently upland communities, although not completely isolated and always engaged in some trade, were in many respects autonomous. Decisions about resource management were largely in the hands of villagers themselves. Knowledge was essentially “local knowledge” and, as has been observed in other cultures, the local (“little”) traditions were more important than any national (“great”) tradition. (See box on “The Need to Put Indigenous Knowledge Back to Work” on pp.14–15.) Certainly the larger world impinged on upland communities in the form of invading armies and eruptions of banditry (as in the case of the Black Flag and Yellow Flag irregulars who caused turmoil in the northern mountains in the latter part of the 19th century). But these interventions were episodic and usually of short duration. The French made a more sustained effort to establish control over the uplands, but in most areas their presence was limited; they preferred indirect rule through native chieftains. Colonial taxes and demands for corvee labor (work provided for little or no remuneration) placed a growing burden on upland people,
but intrusion of external forces into day-to-day life remained limited. In the years since Ho Chi Minh founded the Democratic Republic of Vietnam in 1945, however, upland communities have become increasingly integrated into wider politico-administrative, economic, and cultural systems. The uplands are now rapidly becoming more deeply enmeshed in larger economic, social, and cultural systems in which the locus of authority is not local.

**Politico-Administrative Sphere** Every village, no matter how remote, has its people’s committee, its Party cell, its women’s association, and other mass organizations, all tightly linked into higher-level organizational structures that extend upward through the district to the province to Hanoi. This complex administrative apparatus transmits a stream of instructions from the central government to the people. It transmits the ideas of the people back to Hanoi to a much lesser degree.

This administrative system plays an important role in guiding the livelihood activities of upland villagers. Although often implemented by local organs such as people’s committees or cooperatives, control over natural resources (e.g., allocation of land, permission

*Increasing demand for food crops combined with overworked soils force farmers into less and less suitable areas. One result is the near vertical farm shown here. (Note the bamboo pipe at bottom, an ingenious device for moving water for irrigation or home use.)*
The Need to Put Indigenous Knowledge Back to Work

Indigenous knowledge, also sometimes referred to as traditional or local knowledge, is often neglected when development plans are made. Both planners and technicians tend to pay attention to modern technologies that have often been introduced from other places rather than to indigenous knowledge, which is considered primitive. The result is an erosion of traditional knowledge and the loss of an invaluable resource for humane and sustainable development.

Local knowledge systems in upland Vietnam are rich and varied, the product of localized climates and terrains and diverse ethnic communities. The diversity in local physical conditions has led to a variety of farming systems. Farmers use a wide range of animal breeds, plant cultivars, and special technologies for the sloping terrain. At the same time, communities have developed distinct ways of organizing around the needs of their agricultural and forestry activities.

Lessons Learned Recognizing the value of indigenous knowledge, Vietnam’s Research Center for Forest Ecology and the Environment has begun a project aimed at both promoting the use of local knowledge among extension workers and collecting information that can be used to make future upland development efforts more successful. As the Center has already documented, when local knowledge is left out of the planning process, everyone suffers. Some examples follow.

Developing a cinnamon plantation In the high-mountain area of Quang Nam Province, the minority K’ho people have been cultivating cinnamon for sale to China and Japan for generations. During the 1980s, the provincial and district authorities, wishing to develop the cinnamon industry, had many thousands of acres of forest cleared so that cinnamon trees could be planted in their place. After 10 years, the project has failed. The reason is that State farms did not pay attention to the local experts. The K’ho, unlike the State farms, never planted cinnamon trees below 800 meters in elevation or in a large area. Instead, they planted at higher elevations and always in patches within dense tropical forests to ensure the humidity required by their crop.

Growing anise trees The frontier province of Lang Son and its Tay people have long been famous for an export crop of star anise, a spice. During the 1970s, a number of national projects established thousands of hectares of anise plantations, but the results have been poor. Meanwhile, the Tay continue to run healthy, wealth-producing gardens of anise trees. The Tay, it turns out, know how to select sites for plantations based on many soil features, including color. But modern specialists never asked them for advice.

Growing rapid-yield rice A new rice that could be harvested every 120 days was introduced to the Ba Na people of the Central Highlands. The villagers recognized the benefits of the greatly increased yield and the much-reduced need for maintenance. Yet, at the end of the trial, no households continued to grow the new rice. The reason, as extension workers eventually learned, was that the new rice required work at the time of a traditional festival. Local customs play a very important role in the lives of uplanders, and technical change is unsuccessful when it conflicts with tradition.

Cultivating exotic trees For more than 30 years, national and international support to regreen denuded hillsides has focused on the planting of exotic trees. Eucalyptus, acacia, and tropical pines have all been planted, chosen in part because of their drought-resistance but also because “experts” knew so little about indigenous trees. The eucalyptus, which was used very widely, has been destroyed by fungi and furthermore failed to counter soil erosion on hill slopes. In recent years regreening results have improved because more forest land has been allocated to farmers who know which indigenous trees to use under what conditions.

The Erosion of Indigenous Knowledge Four events have had significant effects on indigenous knowledge and on respect for that knowledge.

The resistance and liberation wars From 1945 to 1975, thousands of men and women moved
from the uplands to the lowlands for national defense. When they returned home, they brought with them new ideas and methods. These have intermingled with and altered traditional knowledge.

**Migration of lowland farmers to the uplands**

The government's program of migration, in particular from the northern provinces to the Central Highlands, created a denser population with an increased number of different ethnic groups living in the same area. The resulting exposure to new forms of knowledge has affected traditional local knowledge, in a process of continual learning and readjustment by local farmers.

**The creation of collectives**

When the Democratic Republic of Vietnam turned family farms over to the management of collectives, local farmers in both the lowlands and the uplands were unable to use their own knowledge of how best to manage resources. Traditional information was no longer passed down from generation to generation. After only a decade of collectivization, indigenous knowledge had suffered, stopped developing, and become lost to the new generation of farmers. At the same time, it is possible that some of the technologies or products introduced by collectivization may have had some positive impacts.

**The move to a market economy**

Population growth is the driving force behind the move to a cash economy, since people must now buy what they have insufficient land to grow. The demands of the market have resulted in the development of some cash crops (coffee, tea, sugar cane). But the price has been the loss of a number of indigenous plant and tree species, as well as farming practices that maintained both the people and the land.

The length of time that fields lie fallow has been cut by two-thirds, and swidden fields have colonized higher and higher mountain slopes, always with decreasing yields. High-quality, disease- and pest-resistant rice and corn cultivars with low fertilizer needs but also low yields, have been abandoned. The production of commodities and the need for new high-yield plants have caused many valuable plant cultivars and animal breeds to be left behind and then forgotten and lost.iii

to cut trees) must now conform to policies and guidelines laid down by the central government. This means that the cutting of forests and the hunting and gathering of wild plants and animals—activities formerly regulated by custom and traditional village institutions—are now subject to national laws.

**Economic Sphere**

Households and villages are increasingly involved in and dependent on the world beyond their experience. They buy manufactured cloth and cover their roofs with tile instead of thatch. They must purchase plastic raincoats, flashlight batteries, cooking oil, fish sauce, monoammonium glutamate, even rice. Most upland households are constantly short of cash. Families with young children can scarcely afford school supplies or tuition fees, let alone pay their taxes. And while traditional medical resources have declined, modern health care and medicines are prohibitively expensive.

Many upland provinces are heavily dependent on government funds to maintain the existing system of administration. Lai Chau Province, for example, gets at least 80 percent of its budget from the central treasury. Routine administrative expenditures from central funds, special development assistance projects, salaries of government officials and military officers, pensions paid to veterans and retired cadre [State and Party workers], add up to a massive cash influx to remote provinces, but little of it reaches the majority of villagers, especially ethnic minority households in areas where the average per capita income may be under US$50 per year.

**Cultural Sphere**

Local knowledge is increasingly considered secondary, and often inferior, to national culture as processed and distributed by the mass media. Traditional ethnic dress, for example, is being replaced by modern lowland styles at a rapid and accelerating rate. This process of integration into a larger cultural system, although having potentially liberating aspects, decreases local control over information flow, weakens local symbols of identity, and converts upland people from producers to consumers of culture.
Their lack of fluency in the national language and low level of literacy put them at a gross disadvantage within the new, larger cultural system.

**Dependency, Not Partnership** This growing integration into extralocal systems is not in itself necessarily undesirable. Many people in the uplands are eager participants in this process and believe themselves to be its beneficiaries. Population growth, although threatening the environment, is partly a result of reduced mortality—a benefit of the extension of national public health services into the uplands. People want more of such services, not less. The ability to meet the needs of an increased upland population is also dependent on introduction of new production technologies (including those for processing) and expansion of opportunities for trade with other regions. If deprived of grain from the lowlands, the nutrition of upland people would be much worse than it already is, and the degradation of the environment accelerated. Integration into extralocal systems is negative, however, to the extent that the relationship is one of dependency rather than partnership. Unfortunately, as experience in upland areas everywhere in the world demonstrates, dependency is the most common outcome when control over resources and the direction of development passes out of the hands of local people. Dependency on external forces will accelerate the process of marginalization already taking place.

**Social, Cultural, and Economic Marginalization**

Many upland groups are not only poor, undernourished, and burdened by poor health. They are also poorly educated, especially the women. They lack adequate access to many different kinds of goods and services. They are underrepresented in the government civil service and private enterprise. And they are victimized by negative stereotypes that portray them as backward, superstitious, and conservative.

Literacy rates are fairly high for some groups (Kinh, Tay, Muong), but remain dismally low for most. These rates do not seem to be rising; indeed, they are actually falling for some minority groups, especially those in remote highland areas. In many of these areas the literacy rate for females is in the single digits.

The percentage of ethnic minority workers in government jobs is low, and it is not rising. Few extension workers, school teachers, office managers or clerks, bank officials, policemen, health care providers, or others who provide public services and serve as "gatekeepers" come from ethnic minority groups or can speak minority languages.

Schools do not provide most students who pass through them with skills or information that will be useful in daily life. They learn little about agriculture, forestry, public health, nutrition, the environment, or any genuine multiculturalism. Nor do they learn much in the way of analytical skills, problem solving, or critical thinking that can provide local solutions to local problems.

The essence of marginalization for uplanders is that they are taught—in schools, mass media, and daily social life—to judge themselves by lowland standards and to internalize their inferiority. The extent to which such negative stereotyping has occurred is poignantly evidenced by the remarks of Vu Dinh Hien, a young student from Lai Chau Province who won acclaim for successfully passing the entrance examinations for three universities: "When I went to Tuan Giao district high school to study, many friends disregarded me because I was from the highlands so must know nothing and be ignorant. I felt angry and sad but did not lose heart and resolved to study hard in order to make everyone understand more clearly about people from the highlands." Hien is evidently a strong-willed individual who struggled to escape the fate to which others consigned him; but many other upland youths are defeated before they ever have the chance to
The dangers of marginalization are little recognized in Vietnam

course of development in ways that are only beginning to be evident.

THE STRUCTURAL DETERMINANTS OF CRISIS

The interacting elements of the downward spiral—runaway population growth, poverty, environmental degradation, dependency, and marginalization—are symptomatic of deeper structural problems. The problems in the uplands are certainly not the intended outcome of government policy, nor are they the product of chance events. The basic pattern of underdevelopment that the Vietnamese uplands share with mountain areas in other Asian countries and even the United States suggests that more systemic factors are at work. In Vietnam, as elsewhere, it appears that the development process is powerfully shaped by four underlying factors: the structures of knowledge, power, social organization, and the economy.

The Structures of Knowledge

Cultural factors play a critical role in the upland development process. State policies affecting everything from the central government to the village level are decided and implemented by men (and a few women) who for the most part share a culturally specific worldview and who base their actions on a common body of knowledge. This is not necessarily the worldview and body of knowledge typical of technocratic staff of international development agencies. Nor is it always the same worldview and body of knowledge of the uplands population.

In this worldview, development is assumed to take place in an orderly, predictable world in which the whole is equal to the sum of its parts. Such a world is readily broken down into pieces that can be reshaped according to a plan. Humans are considered the masters of nature. They can shape ecosystems, social systems, and even cultures by using "rational" models.
Development is assumed to take place in an orderly, predictable world.

Causality is treated as simple, linear, and direct. Reductionist science, it is assumed, can solve all problems. To this basic view of reality has been added the Marxist version of social evolutionary thought. This is a linear scheme that assumes that evolution has a purpose and inevitably leads to a good end. It further assumes that social evolution is unilinear, and that all groups must eventually proceed through a set number of ascending universal stages.

Development, then, is seen as planned movement up a predetermined path. Some groups, in this worldview, move more quickly...
up this evolutionary path than others. Movement up the path is equated with progress. Evolutionary laggards are “backward” and must catch up with those who are more advanced. It is inconceivable to those in advanced stages that they might have anything to gain from those in earlier stages.

Cultures of the ethnic minorities are perceived to be “backward” and it is the right and the duty of more advanced groups to transform them in conformity with the natural order of evolution to a higher stage. Thus, a confidence in one’s own ethnic superiority (a concept decreed as “ethnocentrism” by social scientists in many parts of the world but for which there is no comparable term in Vietnamese) is perceived in a positive light, indeed as a force for progress in the uplands.

Elements of minority cultures perceived to be “backward” (such as shifting cultivation or matrilineal kinship systems) or “superstitions” (like animistic religious beliefs) are to be eliminated as obstacles to progress. But the determination of which cultural traits are backward or are superstitions can only be made by people who view themselves as more advanced and more rational. In Vietnam, these are the lowlanders. It is their imposition of their own standards and perceptions that has driven sociocultural change in the uplands. Members of minority cultures have only passive roles in this process. To use the jargon of contemporary social science, they are the “objects,” not the “agents,” of development. Even many of the upland Kinh are objects rather than agents of development. With relatively low educational levels and still influenced by traditional (“less advanced”) culture, they too are assumed to require guidance from an even more advanced lowland Kinh elite.

The inappropriate imposition of lowland models upon upland realities is a major determinant of the crisis. Few ranking policymakers have any accurate and empathetic understanding of upland peoples and environments. They have a much more valid and sympathetic image of life in lowland Kinh villages, but the lowland structure of knowledge that guides decision making is largely inapplicable in upland circumstances. The resulting development model is based on a particular set of assumptions about the nature of the uplands, assumptions that comprise the “conventional wisdom.”

**Conventional Wisdom about the Uplands** Most decision makers, in fact most Vietnamese—even educated members of minority groups—hold certain truths about the problems of upland development to be self-evident. These beliefs, held unquestioningly and with little or no testing against empirical experience, are important because they provide the assumptions on which development policies and projects are based. To the extent that they vary from actual conditions, they result in misguided development policies.

**Belief:** Upland minorities are involved in closed subsistence economic systems and resist involvement in the market economy in which commodities are bought and sold with cash.

**Reality:** Most upland minorities are deeply involved in the cash economy and have been involved in it for generations, even centuries. For example, the Hmong, often viewed as one of the most subsistence-oriented groups, have for at least a century engaged in production of opium for the market. The Hmong cannot survive without an inflow of cash needed to buy tools, ammunition, salt, and other necessities of life. Problems of food security and transportation require that subsistence production remain very important, but this is because of practical necessity, not cultural commitment to a traditional way of life.

It is the desperate pursuit of cash by minority peoples, not subsistence production, that is causing much of the continuing environmental degradation. The expansion of upland fields to raise corn and cassava to feed livestock which are sold for cash, the hunting of
wild animals that are purchased by traders from China, and the illegal logging and firewood cutting of the remaining forest trees to sell to outside merchants—these are the major sources of environmental degradation in the uplands today. If the upland minorities were psychologically locked into a subsistence mode of existence, none of this would be occurring.

**Belief:** Most upland minority peoples are nomadic shifting cultivators.

**Reality:** There are no truly nomadic peoples in the uplands. A few groups of Hmong continue to practice pioneering shifting cultivation, which requires moving their villages into areas of previously uncut forest every 10 to 20 years when the soils at their old settlement have been exhausted. But their numbers are declining.

In fact, the agricultural systems of the ethnic minorities are quite diverse. Groups such as the Dao and Kho Mu in the northwestern mountains practice rotational swiddening, in which the village site remains more or less fixed for decades but fields are shifted every few years. Probably most minority people, live in permanent settlements where they practice composite swiddening, a highly sustainable system of agriculture in which households combine cultivation of wet-rice fields in the valleys with rotational swiddening on the hillsides (as is done by the Tay of Da Bac). The Hmong and Dao at Sa Pa have converted whole hillsides into marvelous landscapes of terraced wet-rice fields.

**Belief:** The practices of minority cultures are irrational and based on superstitions.

**Reality:** Like all peoples, members of minority cultures hold many beliefs and engage in many practices that are not based on science. In this sense their cultures can be said to be irrational. But it is not necessarily the case that the cultures of the Tay or the Hmong contain more irrational elements than Kinh culture or, for that matter, American or European cultures. Lowland observers tend to perceive the cultures of the minorities as irrational and loaded with superstitions simply because they are different. Because Kinh culture is characterized by a patrilineal kinship system, the matrilineal systems of many groups in the Central Highlands seem strange and irrational. Because Kinh live in houses built on the ground, the houses built on piles by many minority groups seem irrational (even more so when, as is the case with the E De, they are long houses inhabited by matrilineal lineages). Of course, during the colonial period, many French observers made similarly patronizing generalizations about the irrationality of traditional lowland Vietnamese culture because they judged its beliefs and behavior against the standards prevailing in French culture at the time.

In Vietnam, as in many other places, local cultural beliefs and practices that outsiders have dismissed as irrational often have practical survival value. In the uplands, a number of seemingly irrational cultural practices have adaptive value for people living under the area’s special environmental conditions. Some ethnic minorities, for example, live in houses built on stilts, cook with fire inside the house, and stable livestock under the house. Many Kinh perceive these practices as “backward,” yet they may help to protect people against malaria.

**Belief:** Minority cultures are static and actively resist change.

**Reality:** Members of many groups are quick to adopt new technology that is appropriate to the conditions under which they live, but reject new technology that does not fit their environment. Thus, Hmong living around Sa Pa spontaneously developed a system of terraced wet-rice fields that has allowed their villages to remain in the same place for hundreds of years. Hmong in the northwestern mountains, on the other hand, have not adopted wet-rice farming because there is no land suitable for construction of irrigated terraces in their habitat. But these Hmong have been quick to buy modern firearms and