Chapter V

POVERTY AND SUSTAINABLE DEVELOPMENT

Difficulty in accumulating capital, in all its forms, is one characteristic of poverty. Experience shows, however, that there are important alternatives to the accumulation of natural capital for the low-income strata.

1. Level of poverty

Towards the end of the 1980s there were close to 183 million poor people in Latin America –71 million more than in 1970 and 47 million more than in 1980. Of the total number of poor people at the end of the decade, about 88 million were indigent.[1] The increase in the number of poor people during the past decade was almost entirely concentrated in urban areas, although the share of the poor population made up of indigents showed a greater increase in the rural area. In any case, whereas in 1970 only 37% of the poor resided in towns, towards the end of the 1980s, over half of them could be classified as urban poor (see box V-1).

Attention should be drawn, first of all, to the variety of situations to be found in the region. According to an ECLAC document,[2] Argentina and Uruguay, on the one hand, have the lowest percentages of poverty, which affected fewer than one out of every six households in both 1980 and 1986. At the other extreme, Guatemala and Peru showed the highest proportions of poverty at the country level. In Guatemala poverty characterizes two thirds of the households, and in Peru about half of them. Between these two extremes there were two groups of countries in which poverty affected between one fifth and two fifths of the total number of households. The first group, with lower levels of poverty, is made up of Costa Rica, Venezuela and Mexico, whereas Panama, Colombia and Brazil are found in the second group.

The share of indigent households also varied widely from country to country, ranging from levels in the vicinity of 5% in Argentina and Uruguay to over 20% of the households in Peru and even over 30% in Guatemala. The remaining countries fell between these two extremes as in the case of levels of poverty.

A comparison between levels of poverty in 1970 and 1989 makes it possible to view the spread of poverty in terms of variations in levels of income and changes in its distribution. Thus, the two countries with the highest indexes of growth in that period (Brazil and Colombia) are those which exhibited the greatest declines in the level of poverty. In addition, the period 1970-1986 in Brazil and Colombia was not so markedly recessive as in the remainder of the countries. The decline in poverty in Mexico (somewhat less notable) might be explained not only by the increase in its income during the period but also by the fact that it was distributed in such a way that households in the lowest income groups had a larger share in it.

The case of Argentina, where the proportion of the population living in a state of poverty rose by

Box V-1
POVERTY IN LATIN AMERICA: SPREAD AND COVERAGE

The economic crisis that affected the Latin American countries in the 1980s not only brought to light the structural inadequacies of the region's development but also created obstacles to social mobility and cohesiveness. The spread of poverty is one of the primary manifestations of these obstacles.

According to ECLAC estimates, 37% of Latin American households were living in poverty and 17% in indigence by the end of the 1980s. As calculated by the same source, these percentages reached 31% and 12%, respectively, in the urban areas and 54% and 31% in the rural areas. The figures, compared to those of 1970, show both a sharp increase in urban poverty (from 26% to 31%) and a significant drop in rural poverty (from 62% to 54%). Changes in the same direction, but of lesser magnitude, appear to have occurred for indigent households.

Poverty in Latin America today is mainly an urban phenomenon resulting from the burgeoning of its main cities (in the last 20 years, the urban portion of the region's total population rose from 58% to 69%) and the fact that the upward trend in poverty indexes has been concentrated in these areas, especially during the crisis period. Thus, while in 1970 only 37% of the poor resided in urban areas, the proportion had risen to over half (57%) by the end of the 1980s. On the other hand, the extremely poor or indigent today, as in 1970, continue primarily to reside in rural areas, despite the rise (from 31% to 45%) in the urban proportion of the indigent population.

LATIN AMERICA: POVERTY TRENDS AND COVERAGE

(Percentage of the population and millions of persons)

	1960	1970	1980	1986	1989
Poverty (%)	51.0	40.0	41.0	43.0	44.0
(persons)	110	113	136	170	183
Indigence (%)	26.0	19.0	19.0	21.0	21.0
(persons)	56	54	62	81	88

Source: ECLAC, *Magnitud de la pobreza en América Latina en los años ochenta* (LC/G.1653-P), Santiago, Chile, March 1991; and ECLAC/UNDP, *¿Se puede superar la pobreza? Realidad y perspectivas en América Latina* (E/CEPAL/G.1139), Santiago, Chile, December 1980.

LATIN AMERICA: EXTENT OF POVERTY IN 1989

(Projection based on 1986 figures)

	Households				Population			
	Poverty		Indigence		Poverty		Indigence	
	Thousands	%	Thousands	%	Thousands	%	Thousands	%
Total	34 600	37	15 800	17	183 200	44	87 700	21
Urban	20 300	31	7 600	12	103 700	36	39 400	14
Rural	14 300	54	8 200	31	79 500	61	48 300	37

Source: ECLAC, *Magnitud de la pobreza en América Latina en los años ochenta* (LC/G.1653-P), Santiago, Chile, March 1991.

five percentage points between 1970 and 1986, may be explained both by the marked reduction in income and by a deterioration in its distribution. In Costa Rica, Peru and Venezuela, where increases in poverty occurred which fluctuated between one and two percentage points, the national levels of per capita income achieved in 1986 were similar to those of 1970. Costa Rica and Venezuela experienced significant rises in income in the 1970s but recorded bigger declines during the 1980s, which were presumably accompanied by greater concentration.

The behaviour described is also related to the growth of urban and rural population. For Latin America as a whole it is estimated that during the 1970s the percentage of poor households fell from 40% to 35%, while that of indigent households dropped from 19% to 15%. Between 1980 and 1986, on the other hand, the trend seems to have reversed itself, since the figures for both poverty and indigence rose by two percentage points each. The growth of the share of the urban population in nearly all the countries of the region and the fact that the international economic crisis caused relatively greater damage to urban households would explain why between 1970 and 1986 the urban poor as a proportion of the total population rose by four percentage points (from 26% to 30%), whereas in the high-growth years of the 1970s, it fell by only one point. In rural areas, on the other hand, there seems to have been a sizeable reduction in the percentage of poor households during the 1970s (from 62% to 54%), a figure which did not show much variation between 1980 and 1986 although the share of poor people in a state of indigence rose.

In speaking of poverty, the fact that economic and social development has many dimensions must be taken into account. These will determine the differences between the type of poverty which characterizes the Latin American and Caribbean region and that found in the other regions of the world.

2. Population, poverty and the environment

It cannot be shown that a high growth rate of population resulting from a high fertility rate must necessarily be associated with a lower level of development and hence with the existence of poverty. However, the figures available show that there is an association between a country's position in the demographic transition and the degree of poverty it experiences. In addition, existing estimates on fertility showed that, as a general rule, in poor populations fertility rates are two or three times as high as in medium- and high-income sectors. In rural areas, some sectors still show an average of close to eight children per women.

Such high fertility rates in combination with a declining mortality rate owing to primary health care policies produce high natural growth rates. This creates demographic pressure from a basically young population, most of it rooted in poor families, and generates a demand for substantial mother/child health care (including proper environmental health measures) and a marked demand for new employment. In rural areas, however, natural growth may be relatively low owing to high mortality rates accompanied by the emigration of a large number of women of childbearing age.

Because of the patterns of demographic growth in some parts of the region (where there has been a marked increase in urban growth) and the rise in urban poverty, the majority of poor people now live in urban areas; nevertheless, the majority of the rural population is still poor. Owing first to the effects of the crisis of the past decade and second to its own growth dynamics, the poor segments of the population have grown at a higher rate than other sectors.

In the case of both urban and rural areas, impoverishment has close links with the environment. In this connection, mention should be made of the fact that poverty and environmental degradation often occur in the same geographical locations and of the impact of environmental deterioration on the living and working conditions of poor people, who may either overcome or aggravate it. These are essential issues on the environmental agenda of the Latin American and the Caribbean region and can be used for purposes of comparison with other developing regions.

The links between poverty and the environment cannot be viewed as resulting solely from demographic processes taken in isolation but must be considered in connection with many other phenomena of a social, political and economic nature. Poverty in the region is concentrated in a few sectors of the population and in certain rural and urban zones. In addition, in the majority of the countries it occurs in the context of a relatively low ratio between population and natural resources and in national economies which in their majority (some exceptions to this will be discussed below) have the capacity to solve the problems related to poverty in reasonable periods of time (10-15 years).

Long-term studies carried out over a period of 20 years or more show that the gap between the poor and the rest of the population –the poverty gap– has been steadily decreasing. This gap is measured in terms of available income and coverage by or access to basic goods and services (potable water, sanitation, housing, primary health care and basic education). The tendency for the gap to narrow was interrupted in the past decade, particularly with regard to income. The relationship between poverty and the environment needs to be examined in the light of assessments made in respect of a period of intense population pressure (in respect of the total population, including both the dependent and the active population) in countries comprising three fourths of the population of the region.

The relationship between poverty and the environment has been very different in rural as compared to urban areas in forms of dynamics and characteristics. In rural areas, neither the proportion nor the absolute number of traditional smallholders or small producers on the agricultural frontier has varied in 30 years.[3] This has been true in spite of the fact that both the total and the active population have been stable since the 1970s and some efforts have been made to improve land distribution and to increase production and, in some cases, wage employment. Although some of these variables have not changed much and others have shown some slight improvement, the available information indicates that the rate of soil erosion in areas characterized by smallholdings has remained the same or even increased owing to mechanization.

As for migrant farming, which is reported to have increased in the past decade, it provides a means of expanding large-scale livestock-raising at the cost of deforestation and the use of land, which grows poorer and poorer as its natural fertility decreases. The impact of commercial farming on the management of natural, economic and financial resources in rural areas has made it virtually impossible for peasant production to continue in its present state of marginality without eroding the available natural capital.

Commercial farming is an aspect of the rural environment which, in addition to contributing to exports, is increasingly responsible for supplying the expanding urban population, the majority of which falls into the low-income group. With ample land available to them and supported by loans, a road and commercial infrastructure and the State, entrepreneurs have developed a model based on mechanization and the use of chemical agents not always complemented by additional fertilization. The result has been an increase in production, a smaller increase in productivity and a rise in the number of working days. This combination of factors has robbed the soil of its fertility and has required a continued expansion of the agricultural frontier. The deterioration of natural capital has frequently made the production of basic agricultural products, whose prices are compatible with the income earned by the urban poor, more profitable in economic terms, thereby establishing an undesirable link between poverty and the environment.

It is well known that in the urban environment the various social sectors make different contributions to pollution (production of wastes, carbon monoxide, etc.) and use resources (water, land, recreational areas) differently. Frequently the poor pay more for water, both per unit consumed and as a share of their income, when they lack indoor plumbing (or even when they have it), and also for renting urban space.

Although it is frequently heard that urban environmental deterioration affects all urban

inhabitants regardless of the level of their income, there is evidence to the contrary. Urban sites at high risk from floods or landslides, close to outlets of toxic gas or traversed by polluted waterways are occupied by the poorest residents; and it becomes more feasible to mitigate the negative impact of pollution and deterioration as people's income levels rise (see box V-2). On the other hand, remedial activities are financed by taxing the general public with the result that the degree of progressivity of financing corresponds to that of the general tax system. The situation is still more inequitable when the population of an entire country pays to improve the environment of its big cities.

The demand for water by residents increases faster than the population. Urban residents put pressure on the water sources so that sources which are increasingly distant from the towns they serve are used, causing greater damage to the environment because of the growing need to organize the distribution of water and extend it to that part of the population which lacks it. The urban poor play a notable role in this demand for water since basic services (water and sewage) are generally accorded priority in all the countries of the region.

The foregoing analysis makes it possible to weigh and measure the contribution made by the poor to environmental deterioration and the relationship of environmental deterioration with poverty. In Latin America and the Caribbean, most of the blame for soil erosion and for indiscriminate slash-and-burn agriculture cannot be laid on the poor, who use less than 5% of the land and forest resources. As for erosion in areas where smallholdings are located, it contributes to

Box V-2
FLOODS IN METROPOLITAN BUENOS AIRES IN 1985

The link between poverty and the environment is not a direct result of demographic processes but includes the impact of other social, economic and political phenomena. Thus, for example, urban poverty shows a pattern of spatial concentration that tends to coincide with the most vulnerable areas in terms of environmental hazards or risks of natural disasters.

Metropolitan Buenos Aires occupies an area of approximately 7 000 square kilometres. This territory contains a population of close to 8 500 000 people –the equivalent of 50% of the national urban population and 37% of the total population of the country.

On 31 May and 1 June 1985, 308 millimetres of water fell on Buenos Aires. This caused a flood which made it necessary to evacuate 100 000 people, damaged 2 500 dwellings and 14 000 motor vehicles and left 100 000 dwellings without electricity, telephone service and running water. Public and private firms suffered millions of dollars in losses. The number of victims was tragic.

Low-lying areas in the Belgrano, Núñez, Palermo and Villa Crespo districts, areas in the vicinity of the Riachuelo and lower Flores rivers and urban development sites at Lugano became real traps The drainage projects completed in them in 1939 had been allowed to exceed their safety margins with no new works being carried out in spite of the rapid urban growth which had taken place in those areas since 1939. This has made Buenos Aires a highly vulnerable city.

All strata of the population are not of course in an equally vulnerable position. One illustration may be found in the greater degree of vulnerability to flooding of a temporary or self-help dwelling by comparison with a dwelling built of solid material. In view of the fact that much of the flood damage is found in parts of the city in which poverty predominates, it is clear that this problem of vulnerability is a socioeconomic and political problem more than a problem of geography.

Consideration must also be given to the enormous shortcomings of the State apparatus in coping with these phenomena as shown both by the failure to take preventive action and by the difficulty experienced in co-ordinating measures designed to deal with the effects of the floods once they had occurred. Community participation organized through the municipalities can play an eminent role in compensating for the inadequacies of the State apparatus, particularly in efforts aimed at achieving results in the relatively short term. For this it is necessary to develop mechanisms which make it possible to institutionalize such participation so that it operates with ease, flexibility and adaptability.

SOME COST ESTIMATES IN RESPECT OF THE FLOOD

	Thousands of dollars
Damage to telephone services	2 675
Damage to electric power supply	4 500
Civil defense expenses	1 275
Damage to dwellings	165 000
Costs relating to loss of working days	24 300
Vehicular damage	1 050
Damage to municipalities	625
Decrease in value added	4 375
Loss of income (transport)	20 400
Damage to movable goods	9 375
Expenditure on public health	12 500
Estimated total	246 075

Source: L.A. Costa and D.N. Albini, "Las inundaciones en el área metropolitana de Buenos Aires", *Medio Ambiente y Urbanización*, No. 23, July 1988.

poverty now and prolongs it into the future generations of small farmers (see box V-3).

The cost of water is also directly responsible for the growth of poverty in cities, and its incidence is greater than it was 30 years ago. Poor rural families, especially the women and children in them, also spend more time and energy fetching water and wood now than they did then, and the difficulty of access to water and firewood contributes more to rural poverty today than it once did.

Conditions of poverty are partially responsible for the continued practice of migrant farming, which has resulted in deforestation and the expansion of the agricultural frontier. In addition, migrant farming facilitates the expansion of extensive agriculture, the concentration of ownership, and speculation in land recently opened up for cultivation; in other words it sets up obstacles to sustainable agriculture and to the elimination of rural poverty in those areas.

3. Indigenous peoples, poverty and the environment

A special section of this paper must be devoted to indigenous peoples, since they constitute a highly vulnerable sector of the population. In view of the demographic, cultural and environmental diversity of this sector, special attention should be focused on at least three groups of people:

Ethnic groups which make up a large percentage of the total population of a country. It might be said that the indigenous culture of countries with such large ethnic groups is associated with the national culture, as is the case with countries such as Bolivia, Guatemala or Peru, where the indigenous sector of the population inhabits much of the territory, both rural and urban.

Comparatively large indigenous populations which inhabit reserves or reservations, in certain specific areas of countries. The Mapuche reservations in

Box V-3

THE VICIOUS CIRCLE OF PEASANT POVERTY IN THE PERUVIAN HIGHLANDS

The peasant communities of the Peruvian highlands, which have the highest poverty levels in the country, live from the exploitation of fragile ecosystems, with little energy and limited availability of resources per unit of land.

The Inca empire, which also covered these territories, developed around the intensive use of high-altitude areas, especially those located at more than 2 000 metres. Taking advantage of the sinuous geography of peaks and valleys required the large-scale construction of terraces and hydraulic irrigation systems. According to the most accepted figure, there were between 350 000 and 400 000 hectares of terraces in the highlands when the Spaniards arrived. More than 60% of these were abandoned due to the demographic collapse of the indigenous population during the colonial period and the destruction of the slopes caused by grazing livestock of European origin.

Agricultural practices introduced by the Spaniards, although less intensive than the preceding ones, significantly accelerated the processes of erosion. Subsequent demographic recovery, owing in part to significant progress in the health field, has brought about greater pressure on the land, thus intensifying the vicious circle of erosion and poverty. Peruvian peasants have tried to survive, through either occasionally working for pay or overexploiting the soil. The highland peasants' marginal ties to the market economy, together with their limited access to new technology and the fragility and low productivity of the ecosystems in which they have settled, have progressively shrunk their resources, just at a time when the population increase makes these resources more necessary.

The vicious circle of poverty and resource deterioration can only be broken through a revaluation of ecosystemic capital based on soil reclamation, mainly by redesigning the terraces and building irrigation works. By virtue of these changes and the incorporation of new genetic technologies and biological and water management techniques it will be possible to improve land productivity and profitability, and augment the food supply.

Aware of this possible solution for the drama of peasant survival, various governmental and non-governmental organizations in Peru have been encouraging, with the help of international agencies, rural development programmes primarily aimed at terrace recovery in the highland areas. Various programmes have already been launched, the biggest of these resulted in the rehabilitation of 1 200 hectares in three years. Although these efforts have greatly benefitted the communities where they have been applied, the total magnitude is far from significant from the national or local standpoint.

Evaluations of terrace conditions indicate that a large part of those that had been partly destroyed could be reincorporated into agricultural production. A study has been made of the possibility of rehabilitating 80 000 hectares over a period of 10 years, at an average cost of US$1 900 per hectare. The study estimates an internal rate of return of 10%, without considering the possible positive external effects, and indicates that this rehabilitation could mean a substantial increase, of approximately 7%, in the country's irrigated land.

In this way, the descending spiral of poverty and the deterioration of resources could be reversed and the quality of life of the highland peasant communities markedly improved.

Source: Nicolo Gligo, "La complejidad campesina en ecosistemas andinos de altura: Bases para políticas de desarrollo", *Sobrevivencia campesina en ecosistemas de altura* (E/ECLAC/G.1267), vol. I, Santiago, Chile, 1983. United Nations publication, Sales No. S.83.II.G.31, vol. I; and Efraín González de Olarte, *Estudio de factibilidad de un proyecto nacional de desarrollo en áreas de recuperación de andenes en el Perú* (LC/R.747), Santiago, Chile, ECLAC, 1989.

Chile provide an example of such populations.

The "forest aborigines", who constitute a tribal culture of limited size and are in danger of extinction as their habitat is destroyed and they are exposed to deadly diseases.

The following considerations apply mostly to the first two categories, although many of the points raised also pertain to the third category.

Special treatment should be given to the formulation of social policies relating to the indigenous population of countries for various reasons of a socioeconomic, demographic and

cultural nature and because of considerations based on human rights. From the demographic point of view, it is estimated that the region's indigenous population includes close to 50 million persons. This is in fact an underestimation of the total indigenous population, since the criterion used to define the term "indigenous population" is based on cultural considerations, such as the language spoken. This criterion does not take into account the fact that because of the expansion of primary education and other reasons of a "practical" nature (incorporation of the sector into the market), many indigenous people frequently now use the national language. It is estimated that many young people maintain the cultural traditions of their people although they may not use their mother tongue. Available estimates indicate that indigenous people make up close to 10% of the total population of the region; however, in some countries this figure is well above 50%. In many of those countries, especially in the Andean subregion, it is impossible to imagine rural development policies which do not centre around the indigenous population, which makes up about 80% of their rural population.

In the majority of cases, indigenous people live in much worse conditions of poverty than the rest of society, and their settlements are located in highly degraded areas. Recent studies show that, although there is great diversity in this connection, this segment of the population is subject to an extremely high infant mortality rate, which in some cases exceeds 150 for every thousand live births; in addition, the illiteracy rates for it are higher than those for the other population segments. For example, the 1976 census for Bolivia shows that about 98% of the monolingual indigenous inhabitants were illiterate, and their fertility rates were high. As though this were not enough, the environment in which they live is frequently characterized by unhealthful environmental conditions in that potable water and an adequate system of human waste disposal are not available to them.

In this stratum of the population, most sectors are not integrated into the rest of society in that their patterns of socialization do not conform to those adhered to elsewhere; and they lack formal education facilities, the natural resources and organizational capabilities needed to make their demands known. They are living in a form of poverty which tends to recur generation after generation. Another factor which distinguishes indigenous communities is the culture to which they belong. It sets up barriers which make it more difficult for them to take part in the benefits of development and frequently gives rise to ethnic discrimination.

The great majority of these peoples have a very special relationship with the land, which makes them potential allies in all efforts to protect the environment. Indigenous peoples, most of whom inhabit rural areas or territorial reserves, must subsist on what they can produce there. This is even more true of those who live in forests. The preservation of their very identity depends on their ties to the earth. When indigenous people participate in activities which are detrimental to the environment, such as the plundering of forests in new agricultural frontier areas, this is generally due to their having been expelled from their native soil, which forces them to join groups engaged in the process of land settlement.

Some consensus now exists as to what criteria should be taken into account in formulating development policies geared to the needs of indigenous populations. A basic criterion is that of promoting the enrichment of their culture and the strengthening of their identity. The organizational structures of indigenous communities may help enormously to promote sustainable development programmes since they can mobilize the mystique and solidarity which an indigenous population feels for its institutions and leaders. It is through these organizations that technological progress can be made both in restoring the quality of the earth and in looking for new ways of making use of biological diversity, combining traditional know-how with contemporary scientific progress. It would therefore seem advisable to provide communities with the financial and technical resources they need to increase their production capacity (crop-raising, cottage industries and trade). This would increase their employment opportunities and keep them from falling apart as a people.

With regard to the spoken language, the most practical solution –bilingualism– is already being applied out of necessity. Now explicit government policies are needed so that from childhood on a country's indigenous population may learn both its mother tongue and the national language, which would enable it to preserve its traditions and while at the same time becoming part of the development movement. In short, what is needed is to combine the natural relationship of these peoples to their environment –their ties to the earth, which are an essential part of their culture– with modern technologies which do not violate their lifestyle.

4. Poverty and capital formation

Much poverty is the result of difficulties in accumulating capital. The poor are characterized by a low saving rate and level of investment and by being at a net disadvantage in their capacity to accumulate physical and financial capital. Nevertheless their position with regard to other forms of capital may have some positive aspects.

For this reason, if the poor sectors of society are to accede in a balanced manner to the various kinds of capital which contribute to development, at least two aspects of the problem must be taken into account: i) the nature of the various kinds of capital and their relationship with poor people and ii) the relative advantages of forming those kinds of capital.

As regards natural capital, it should be noted that poor people live in areas where natural resources are scarce and the environment has greatly deteriorated. As stated above, this deterioration is the result of the displacement of their activities to areas where natural capital is not very highly regarded (having minimum available and obtainable rent) or where other forms of capital are virtually absent. This displacement leads to a vicious circle of poverty ("destroy and survive"). The lower incomes are, the more short-term oriented consumer choices will become because of immediate need. Thus peasants, who often live at subsistence level on low-yield land, will continue to use that land regardless of the degree to which it has deteriorated. It would be hard to expect land (defined by peasants as a consumer good) to become a capital good. Overexploitation of that land will, however, lower its productivity, causing poverty to increase.

The depredation of natural capital also affects patterns of consumption and the net availability of alternative resources. For example, a low-income family meets its energy needs by using firewood, coal or agricultural waste. This puts pressure on woodlands with well-known ecological consequences (changes in climate, erosion, sedimentation). When agricultural waste is burned –instead of being used to protect and improve the structure of cultivable soil–, an additional drop in productivity occurs as a direct consequence of the loss of the organic material from the soil which plays an important and beneficial role in moisture retention and ventilation, *inter alia*. This drop in productivity is reflected in a steady decline in incomes and well-being, and poverty increases.

In urban areas the process of marginalization is similar. Poor people living outside the prevailing economic system experience serious difficulties in gaining access to the net benefits yielded by either formal producer or consumer markets and in gaining access to the income generated by public investment in infrastructure. In addition they live in urban areas where the available resources (water, land) are very limited. The low value placed on these resources is related directly to their quality and to the quality of the environment in general (air, drinking water and sanitation services, housing).

As for financial capital, the comparative advantages of the poor with respect to its formation are minimal. The poor sectors of most economies of the region are unlikely to gain access to capital markets or opportunities for sustained formation. It is also obvious that financial institutions (formal or informal) are much more highly developed in urban areas than in the rural sector. The capacity to form capital in some rural areas is increasing thanks to the development of informal financial institutions. This does not mean that access to these financial markets or the use of available capital do not come at a high cost, which in some cases may be classified as usurious. In both rural and urban

financial arrangements, the lack of collateral guarantees (such as ownership of real estate) or inadequacies in institutional machinery (such as provisions for payment in kind or credit facilities), has limited the ability of poor people to form financial capital.

As for physical capital, the ability to accumulate it also depends on where poor families live. In urban areas, the rates of accumulation of physical capital are minimal, and can be changed only by factors outside the economic and social sphere of the poor sector. This results in intervention by the government, which provides public services related to housing, drinking water, sanitation, the paving of roads, etc. When no physical capital is accumulated, a significant number of poor people are left in inhuman living conditions, which will grow worse as competition for land, an extremely scarce resource in large urban concentrations, increases. In rural areas, the formation of physical capital is important for a different reason: it determines the degree of access to development, including access to electrification, road construction, irrigation works, hospitals, marketing centres and other facilities.

The indivisibility of physical capital is central to the process of accumulation. Hospital, road and, up to a certain point, housing, water and sanitation are indivisible in terms of the per capita consumption of the poor. Thus, there are no incentives for them to invest their meagre savings. One way of remedying this problem has been to increase the efficiency of community organizations, which are essential to the accumulation of physical capital, such as rural roads, drinking water supplies and irrigation infrastructure, and to the provision of proper management in order to avoid depredation. The community, as a unit of account in the formation and use of physical capital, is more than the sum of its parts. This fact, which seems so obvious, is essential to an understanding of the potential benefits of other forms of capital.

Institutional and cultural capital (the rules and regulations governing decision-making systems) are very important for the total eradication of poverty. Poor families posses a significant amount of institutional and cultural heritage or capital. In spite of this, most development programmes ignore the existence of these kinds of capital or substitute other kinds of capital for them. Failure to recognize the existence and value of the institutional capital in the hands of the poor is the main cause of the failure of many development programmes. This kind of capital is replaced in two different ways. First of all, it is replaced through systems of education which are out of touch with reality and with the cultural and institutional heritage of poor people. The second way is through the creation of development organizations as substitutes for those which already exist.

The following features characterize the institutional capital of poor people, to which due consideration should be given:

- It is not without value: on the contrary, it has a tremendous amount of economic as well as social and environmental significance.
- Most of the institutions involved are situated outside of the formal market structure.
- Its regulatory structure is fairly complex and reflects the characteristics of a society on which different social systems (indigenous, colonial, post colonial, peasant, etc.) have been superimposed.

Many of the traditional systems of production used by indigenous groups are not sustainable in terms of the management of some natural resources.

The considerations presented above lead to a number of conclusions. First, poverty is a complex problem, whose solution does not consist merely in increasing peoples capacity to sell their labour on existing markets. This solution, in which poverty is viewed as a "non-qualified" input, is not only erroneous but is also counterproductive. Improving the abilities associated with the sale of the services of workers is only one of the requirements needed to relieve poverty, but taken in isolation, it does not suffice. Secondly, poverty will not be eradicated unless poor people are given a better chance to accumulate capital. Increasing only one or two kinds of capital will not save people from poverty. Consideration must be given to the comparative

advantages of poor people in all spheres of accumulation. Finally, neither institutional nor natural capital has so far been used effectively in programmes to combat poverty.

5. The relationship between natural capital formation and poverty

There is some regional evidence that poor people have a tremendous capacity for accumulating natural capital. It has been shown that the return to inputs which have so far been regarded as "unproductive", when placed in the hands of the poor, may be increased by implementing certain programmes in areas where natural resources exist. The once inevitable trade-offs between growth, equity and sustainable development are no longer so. On the contrary, equity programmes aimed at the development or management of natural resources are showing great potential in the countries of the region. Forestry programmes with a "social" dimension, small-scale fish hatchery and fishery projects and the development of small-scale livestock-raising (in areas suitable for grazing) are three ways in which the poor can be helped to accumulate capital.

Forestry programmes have been of help to small farmers and even landless peasants. The success of such programmes has been due to the fact that the trees planted required little space, the species sown normally met their growth targets and, in some cases, little maintenance was required. Moreover, the amount of money or other forms of input required for such projects is also minimal. After a few years, the trees begin to represent an enormously important form of capital in the lives of poor families since they are not only a source of income (sales to sawmills) but also provide shade, food for livestock and a source of supply of firewood, in addition to their other advantages.

Fish hatcheries also provide low-income sectors with a means of accumulating capital. With proper design and technology, in most cases such projects can be implemented on any scale; nor do they compete for arable or any other kind of land. In fact, many of these are carried out on land which can be used in no other way, such as flood plains or wasteland. In a number of countries of the region, including Panama, fish hatchery programmes have yielded a net profit for poor families and for isolated communities in mountain areas. The productive use of water is a logical and relatively easy step to take by people living in rural areas. In cases where there have been problems in obtaining loans or financing, the fish ponds have been used as collaterals. Just as forestry programmes yield large profits in terms of energy (firewood and coal), fish hatcheries are very profitable in terms of nutrition.

Small-scale livestock-raising, in either open or closed areas, has yielded significant benefits for thousands of families in the region in terms of income, nutrition (milk) and environment (protection of grasslands). In these programmes, positive results may be observed in the areas of growth, equity and sustainable environmental development. In some cases, the animals raised are also used for transport, farm work and other pursuits typical of a farm region. Milk production helps to improve nutrition while increasing the short-term availability of cash.

6. Technology and poverty

All the ways in which the poor can accumulate capital depend on the availability of technology. Technologies involving the intensive use of physical capital require advance capital formation to an extent which is beyond the possibilities of the poorest people. On the other hand, the application of technologies which facilitate the accumulation of capital through the use of labour can initiate a process capable of breaking the poverty cycle.

In addition, the increased application of advanced technologies which enable human, physical and natural resources to be used to enhance sustainability makes it easier to raise the real incomes of all the members of the community. In this way, technological development makes a decisive contribution to sustainable development. This subject will be considered in the following chapter.

Notes

[1] ECLAC, *Magnitud de la pobreza en América Latina en los años ochenta* (LC/G.1653-P), Santiago, Chile, March 1991.

[2] *Ibid.*, annex 2.

[3] PREALC, *Empleo y equidad: desafío de los 90*, Documento de Trabajo series, No. 354, Santiago, Chile, October 1990.