

ANNEX 2
TO MINUTES OF THE SAO PAULO MEETING

PRESS SEMINAR
LIST OF PARTICIPANTS AND ADDRESSES



INTER PRESS SERVICE

LISTA DE PARTICIPANTES NO SEMINÁRIO DE IMPRENSA DE 27 de OUTUBRO

LISTA INICIAL

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Mario Viana - Folha de São Paulo
José de Assis Faria - O Globo/Rio de Janeiro
João Batista de Freitas - Jornal do Brasil/Rio de Janeiro
Letania Menezes - Isto É/São Paulo
Randau Marques - Jornal da Tarde/São Paulo
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ADDRESS BY MRS GRO BRUNDTLAND
CHAIRMAN OF THE
WORLD COMMISSION ON ENVIRONMENT & DEVELOPMENT

IPS PRESS SEMINAR
SAO PAULO, BRAZIL

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It is a great pleasure to be with you here today, in Sao Paulo.

The Brazilian colleagues here, and those of you who work in Brazil, will already be familiar with the environment and development challenges faced by this great country, which is so rich in human resources, and natural resources.

Those of us who come from other continents, but who have just visited Cubatao, Serra do Mar and Piracicaba, already have a first-hand idea of the size of the problems, and the effort that is going into their solution.

We will learn more in the course of this seminar about some of the pressing environmental issues of Latin America.

Our perspective is that of sustainable development.

Brazil's population, now some 137 million people, is likely to grow to 281 million before the growth levels out. Brazil is a rich country in terms of natural resources and choosing environmentally sound paths to development constitutes a major challenge.

Brazil can hardly afford not to develop its natural resources. In the Amazon basin, for example, there are enormous hydropower and mineral resources to be exploited.

Yet at the same time, Amazonia contains the biggest area of tropical moist forest in the world. Its ecological riches, its potential wealth as a pool of genetic resources, and its climatic role, are most wholly unexplored. Three-fifths of the Amazonian forest are part of the sovereign state of Brazil, but its future is also of global concern.

What little evidence there is suggests that the size of the Amazon rain forest may be halved by the year 2000. This, it seems, may affect the climate of the whole Amazon basin, and the surrounding areas, which will become much drier.

Is this a problem only for Brazil? I do not think so. We live in an intricate and inter-dependent world, where the clearing of tropical forest for timber, or for cattle-raising, has global repercussions.

These repercussions are complex and hard to document. But we know, from the day to day reports of the media you write for, that they are real.

A first problem in the South and East of the Amazon basin is : how to set up a rational process of sustainable development, rather than an unintentional process of desertification, which would lead to poverty and conflict.

A second, and tougher problem is : What is the responsibility of the world community to foot the bill for the costs of environmental action? Not only in the sense of the costs conservation and protection, but in the much wider sense of international relations on a just and equal basis.

Another example of our agenda is that of the "mega-cities" of Latin America. Sao Paulo, by the year 2000, may be a megalopolis of 26 million people, and Rio a city of 19 million. Already, the major cities of the so-called "Third World" are surrounded by slums and shanty-towns. If they continue to grow, where is their drinking water supply to come from, or the housing for the poor, the transport, the schools and health services?

These are not "environmental" questions in a narrow sense. In any large, modern democratic society they are key political issues: of resource management, of social equity, and of the distribution of the proceeds of investment in industrial or agricultural development.

I know there is a lively debate on these issues in Brazil. In the next few days we will be able to see the thinking and management which are being used to tackle them by those responsible for the Brazilian environment.

I am giving Brazilian examples, because we are here as guests in Sao Paulo. But as Chairman of an independent international Commission, I shall return to the global aspects of environment and development problems.

Almost all environment problems are interlinked, complex processes which cannot be tackled only at a national level.

One hundred years ago, my native country, Norway, had a farming and fishing economy, of isolated and scattered communities. We have since industrialized, and discovered vast reserves of that precious energy resource, petroleum. We start to worry about our unemployment rate when it exceeds 1-2 percent.

And yet, our forests and lakes and soils are being destroyed by acid pollution. At least 63 percent, and maybe as much as 92 percent, of the sulphur emissions which are acidifying our land, killing our trees and poisoning our lakes, come from other countries in Europe: from Britain, Germany, from Poland and elsewhere.

Norway cannot act by itself to stop acid pollution. It can do so only in agreement with other countries, by recognizing an international problem, and seeking an international solution. I wonder whether the same is not true for Brazil, where trees in the forest reserve of Serra do Mar are dying from the acid pollution of imported industrial technologies in Cubatao.

For a full understanding of the threat to tropical rain forests, or the urban problems of the Third World, we cannot ignore international economic relations.

Forests are being cut down, for example, to earn the export revenues from tropical timber in order to service foreign debt. And when the prices of major export commodities in the world market are depressed, there is pressure to turn yet more land to cash crops, reducing forest cover, food production and food security.

There is no doubt that international economic relations work in favour of the rich countries, and at the expense of poorer countries. Worse still, the international monetary system ensures that the burden of "adjustment", in order to keep an international credit-rating, falls on the poor. Cuts in public spending, and increases in the prices of basic necessities, hit hardest the rural poor and the shanty-town dwellers.

These external pressures on the development of the Third World countries cannot be denied. They also have a far-reaching effect on the environment: not least because of more "slash and burn" destruction of forests by hungry farmers, and a bigger influx to the cities, of people who can no longer survive in an impoverished rural environment.

The debt burden is increasing and the poor countries find it very difficult to obtain credits. It is clear that if more resources go into debt servicing, or if the terms of trade deteriorate, or if development aid is cut or comes with more strings, there are less resources available for development.

And then everyone is poorer, there is less to invest, and the investors cut corners at the expense of the environment. Quick returns become the order of the day, regardless of the longer-term needs of sustainable development for planet earth and its people.

Sustainable development calls for extra investment, considerable political will, and broadly-based support. These conditions become that much harder at a time of global economic crisis, austerity plans and a general drift away from international co-operation. Better North-South relations, and a more equitable international economic order, are essential if we are to build a future for our children which is more prosperous, more just and more secure. In an age of weapons of mass destruction security can no longer be achieved at the expense of adversaries. Nations have to cooperate in order build a common security.

Let me finish this introduction by talking briefly about the Commission and its work. The Commission was set-up in 1984, as an independent body, to look at critical environment and development problems, and propose better ways for the world community to tackle them.

We are still at a stage of fact-finding and discussion, which we are making as open as possible. I think it is the first time a Commission of this kind has held public hearings, for individual experts and non-governmental organizations to be able to voice their concerns. We have already held such hearings in Indonesia and in Norway, and will look forward to the sessions in Sao Paulo and Brasilia in the next few days.

During this and further meetings we shall prepare our report, which we expect to release early in 1987.

The Commission has members from 22 countries, and of course there are sometimes differences of view. We are still talking, and do not yet have firm conclusions, as a Commission. But many of us do have strong views on a number of the issues we are examining, and I and my colleagues will be glad to share them with you in the next few days.

Let me conclude by saying how important I believe your own role is, as journalists.

The Commission itself, especially in this fact-finding stage, may not be the most newsworthy. But we are developing a report which must be a clear and credible "message" for the world community, and we will need your professional help in broadcasting that message, as widely as possible.

Sound environment and development policies will only be given the priority it deserves by governments, by businesses and by the world community if they are put much, much higher on the political agenda.

We all know the media have a key role in this: both by informing, so that the issues can be discussed by an informed public: and because of the role journalists play as leaders of opinion.

So, as we start our seminar, I should like to say: I and my colleagues are here to be briefed, not just to brief: to listen, not just to talk: and to learn from you, especially, the best ways of communicating our concerns to the widest possible public.

With which, let me thank you all for coming: let me thank our Brazilian hosts for their very open and hospitable welcome: and let us start our discussion.

DEBT, DEVELOPMENT AND ENVIRONMENT

- A. Latin America is undergoing its worse socioeconomic crisis since the Great Depression; behind the debt crisis there looms a profound development crisis of a structural and long-term nature

Despite a weak recovery of the Latin American economies in 1984 the bleak prospects for 1985 confirm that the region is still immersed in its worst economic crisis since 1930. GDP per capita in Latin America in 1984 was nearly 9% lower than in 1980, and similar to that attained in 1976. The 1980s promise to become the lost decade in recent Latin American economic history.

The downward trend of the per capita gross domestic product over the years 1981-1984 attained dramatic proportions in a large number of countries (see Table 1). Thus, during the period in question the per capita product fell by about 25% in Bolivia and almost 22% in El Salvador; it suffered a reduction of approximately 16% in Uruguay, Venezuela and Guatemala; it went down by between 13% and 14% in Peru and Costa Rica; it decreased by 12% in Argentina, Haiti and Honduras; and it fell by 11% in Chile and 9% in Brazil.

The impact of the present crisis on Latin America has been compared, in its depth and extension, with the Great Depression of 1929-32. There is, however, a fundamental difference. Whereas that depression affected primitive and rural societies, this one is taking place in relatively modern, urban societies, characterized by a dense concentration of population and economic and socio-political activity in the metropolis. One of its most overwhelming indicators is the magnitude of open urban unemployment which, it may be recalled, include some of the largest urban concentrations in the world. As Table 2 shows, urban unemployment increased sharply between 1979 and 1984 in all countries for which data is available. With the exception of Brazil and Mexico, where the increase has been relatively modest, the rate of urban unemployment has doubled in Argentina, Bolivia, Uruguay and Venezuela, and has grown considerably in Colombia, Costa Rica, Chile,

Paraguay and Peru. These figures may not look too impressive in view of the large unemployment prevalent in most European economies. But there are at least three fundamental aggravating factors. The first is that the Latin American poor do not have accumulated assets of durable goods to speak of. Secondly there is little or no social security and unemployment benefits to compensate for unemployment. Third, this increase in unemployment is over and above massive rates of urban and rural underemployment.

Another phenomenon which hits the urban population particularly hard, especially the unemployed workers and the marginalized sectors, is inflation. The rate of inflation gathered enormous speed in Argentina and, above all, in Bolivia, and continued to be very high in Brazil and Peru. The rate of increase of prices also accelerated sharply, although starting from very different levels, in Uruguay, Nicaragua, Jamaica, Paraguay, Costa Rica, Venezuela and the Dominican Republic. In contrast, inflation declined in Mexico, although it was still high both in historical and in internationally comparative terms; it dropped sharply in Ecuador; it remained relatively constant in Chile and Colombia, and was very low in El Salvador, Haiti, Honduras, Barbados and Panama. (See Table 3).

As a result of all this, serious declines in the real value of wages have been registered which are, in many countries, lower now than the levels achieved a decade and a half ago. There has also been a deterioration -and in some cases this is abysmal-, in nutrition, health and housing conditions, as a consequence both of the phenomena discussed above and, in addition, due to drastic cuts in basic investment and social expenditure. The acute tensions and social and political conflicts characteristic of the Latin American scene in recent years should therefore come as no surprise.

Despite the enormous costs, in economic, social and political terms, which the crisis is provoking in almost all Latin American nations, many bureaucrats, businessmen, scholars and politicians in various parts of Latin America do not yet seem to have fully grasped the dramatic implications of the present situation. It would appear, in fact, that a sort of mental inertia persists, supported by the inherently over optimistic official and financial press, which is still riding the crest

of the exceptional period of economic growth of the 1950s and 60s and the financial boom of the 70s.

The development and external debt policies pursued in previous decades aggravated in our countries their traditional conditions of extreme dependence and vulnerability, in the face of an increasingly stagnant and unstable international economic system. In these conditions, the international economic crisis led to highly restrictive policies as a response to recession, policies intended to balance external accounts and keep the economies open. Far from alleviating the crisis in development, these policies further exacerbated it.

These policies took the form of sharp monetary and financial restrictions and decreased public expenditure, which led to a fall in income and expenditure in the private sector. The contraction in expenditure was most marked in investment, which is more flexible and variable, particularly in the construction sector. This led -as has been remarked- to a large increase in unemployment, underemployment and marginalization, and a fall in real wages and incomes, especially among the low-paid. It resulted in the suspension of payments for public services (water, sewage, refuse collection, electricity, fuel, telephone, etc.) as well as arrears in rental payments and the servicing of housing debts. Equally, there is a considerable lag in the payment of both state and local taxes and rates.

All of this enlarges the fiscal deficit, which in turn leads to a reduction in public expenditure, especially in investment and social services, which are easier to cut than current expenses -principally the salaries of public employees.

We are in the presence of a real recessionary vicious circle, mainly urban in its manifestations, concentrated above all in the metropolitan areas, which are those requiring the greatest levels of financial resources in order to function.

The combination of external factors referred to above and the drastic internal adjustment, which was basically translated into a substantial drop in imports, has led in recent years to a shift from the enormous influx of foreign finance which characterized the last five years of the previous decade to a position where Latin America "exports" or transfers large sums of net resources to the developed

world; these transfers reached around 80 billion dollars between 1982 and 1984, which represents approximately 25% of total exports in the region during this period. (See column 3, Table 4.) Nevertheless, the external debt has continued to increase, now standing at US\$ 360 billion and growing further (see Table 5), and the servicing requirements alone reached more than 35% of exports between 1982 and 1984.

One of the reasons for the failure to appreciate the gravity of the situation is the belief that it will soon improve and we will quickly return to the "normality" of past decades. However, a realistic perspective in no way endorses these expectations. The deterioration in the long-term conditions for growth of the industrial economies and of the international economy is such that we cannot hope for a restoration of the rates of expansion which prevailed in the post-war decades. Nor are the conditions auspicious as regards international trade, investment and particularly external finance for developing countries. Over all this looms the enormous burden of external debt, whose servicing seriously compromises the possibility of even minimal growth in our economies. The most optimistic projections scarcely permit us to envisage the restoration of pre-crisis levels of economic activity until the end of the decade!

To further understand the severity of the current crisis it is important to bear in mind that it is the culmination of several decades of exceptionally favourable economic growth, an abundance of external and internal financial resources, both public and private, high investment and expenditure, especially in urban areas and above all in the metropolis. What hopes may we hold for the future then, when the problems of unemployment, poverty and inequality, particularly in the cities, will become more acute and the crisis deepen under circumstances when public and private resources, both internal and external, will most probably be maintained at approximately their present low levels, without much prospect of an increase and with the possibility of further reductions?

Under these conditions, high capital accumulation, a central condition for growth, and for the possibility of development, has become completely impossible. The service of the debt does not only mean that a substantial surplus has to be achieved in current external account, but also that a substantial proportion of domestic savings has to be

transferred abroad. This has generated the transfer problem, the conversion of internal savings into hard currency. This is the problem that has created the large concern with the questions of international finance and trade that prevails in the literature on the debt problem. But there is the other problem, of how to generate the domestic savings necessary to compensate for the external surplus. This problem has at least three crucial aspects.

Domestic savings used to be complemented to a substantial degree by foreign savings (and the corresponding deficit in current account) to achieve the investment level which allowed these countries considerable growth. To maintain that level of investment, domestic savings would have to increase not only to a similar level, but substantially above, since they would have to finance the additional savings necessary to compensate for the debt service (the equivalent to the new necessary external surplus in current account). This implies an increase in the average domestic savings rate from substantially below to well above the investment rate. And this means an increase in the marginal savings rate which is so high that it seems quite impossible to achieve in the short or even the medium term.

The second aspect is that the considerable savings effort which these countries would have to make to service their foreign debt is totally incompatible with a recessionary adjustment policy, which reduces personal incomes, business profits and government revenues, and therefore the sources of savings. In other words, there is a fundamental economic contradiction in the present policies of debt servicing and recessionary adjustment, unless external conditions improve dramatically (a substantial decline in interest rates, growth in the industrial countries, reduced protectionism, better terms of trade, new flows of private capital, new long term flows of private and public finance at concessional terms), or a moratorium on debt servicing for a substantial period of time is agreed (it would have to be agreed, in order to avoid further deterioration in the international environment of the debtor countries).

The third consideration, which is the one that has been voiced most forcefully and with increasing urgency, especially by the political

leaders of the Latin American countries, is the socio-political contradiction. Maintaining stagnant levels of economic activity, substantially below full capacity, with high rates of unemployment and underemployment, decreasing real wages, deteriorating social expenditures and services, and increasing poverty, is becoming totally incompatible with the existence of stable democracies. Or for that matter, with stable political regimes of any kind.

- B. The crisis is inducing a backward trend in the relative priority of environmental concerns while, at the same time, generating an increased pressure on natural resources and the environment

Although in recent years public awareness and concern with environmental issues has increased substantially, the environment has never been an area of high priority as regards government action. As a consequence of the crisis, there is now a clear trend to downgrade its importance even further. This is happening within a context of very weak environmental institutions, where no well established institutional traditions exist in these matters. Moreover, there still prevails an attitude of considering environmental concerns as being against development, particularly in some very powerful circles, as those more closely related to large scale development programmes and projects. Neither in official nor private circles is there a consensus for implementing environmental management within certain institutional and legal patterns that are explicitly and universally accepted. Therefore, in many cases, the crisis has caught environmental concerns in a situation of institutional indefiniteness. In a large number of cases, environmental matters have been the responsibility of intermediate levels of public administration for years, without access to the decision-making process at the highest level. In those cases where specific environmental institutions have been created (ministries, secretariats, undersecretariats, offices and institutes assisted by national ecological commissions, etc.), they have not been granted sufficient administrative and political power.

In these circumstances it is no surprise that, due to budgetary restraints involving severe reductions in public expenditures, the emergent environmental institutions are being jeopardized. Budget allocations have been severely reduced and personnel is being reassigned and specialists have been dismissed, affecting activities such as ecosystem management, pollution monitoring and abatement, desertification control, environmental education, a research on endogenous technology and bioproductive systems, etc., as well as affecting these institutions' own basic operations and status. The economic and financial policy makers, under great pressure as a consequence of the crisis, frequently neglect

requests for the allocation of resources for environmental protection and improvement.

This phenomenon goes beyond a purely formal institutional problem. In so far as proper and opportune "antidotes" are not found, the possibility of any kind of meaningful environmental action will be outweighed by the more politically appealing and expedient short term economic and financial approach. Most of the achievements reached in these matters in the region since the Stockholm Conference would be lost or put in serious danger.

In relation with the second effect, i.e., increasing pressures on natural resources and the environment, two different processes must be considered. On the one hand, there has been an overwhelming increase in the levels of poverty triggered by the recession and the adjustment policies, as discussed above. This has meant an increase in the over-exploitation of land by the peasantry. Well known phenomena such as deforestation, erosion, desertification, ecosystem degradation, exhaustion of the soils, sedimentation of water basins, loss of flora and fauna resources, etc., will be accelerated.

On the other hand, these poverty-induced processes have been and will be further aggravated by the great challenges which the Latin American economies face at present: how to produce more foreign exchange to service the foreign debt and more food to meet the increasing demands of the population. In most cases, the response has been not only to further modernize farming but also to "harvest" the mineral, marine and agro-forestry resources thereby accentuating the above mentioned processes of deterioration of the environmental resource base.

The environmental effects of the crisis also appear in the urban sector. To begin with, rural emigration has accelerated, adding to the urban poor. Moreover, increased unemployment, lower real wages and a reduced level and quality of social services have substantially added to urban poverty. All this implies increased pressure on urban land, informal activities, housing, health services, urban infrastructure, etc., and a severe deterioration in living conditions. Impoverishment in

urban centers therefore also implies a process of deterioration of the built-up environment.

Most of the above mentioned environmental problems existed before the acute crisis of the last few years. Therefore, they are a matter of public knowledge, although much more quantification and systematic monitoring of recent changes is needed. I will not discuss them further except to emphasize that the crisis has aggravated such processes and that they will continue to worsen if there is no real conscience that the crisis will be not easily and rapidly overcome, and that therefore new strategies and policies are needed.

C. How to cope with the environmental risks and problems stemming from the crisis. It is urgently necessary to restate the environmental discourse and to imagine and design an environmental strategy that is credible and relevant in the face of the present specially unfavourable political and economic conditions. The resource-mobilization approach.

The crisis has made it clear that, although the need to protect the environment against the traditional problems of deterioration and depletion continues to be a valid objective, policy makers responsible for environmental management ought to avoid negative attitudes in the face of the need for economic reactivation and growth. If a purely defensive and conservationist behaviour is maintained, there is great risk that governments, burdened by the hardships of the crisis, may banish the subject from their consideration altogether. A defensive approach might also arouse the mistrust of the population which is in desperate need of income and employment opportunities. That this is more than simple especulations or a theoretical scenario is proven by the already discussed retrogression that the environmental position has undergone in the national institutional setting of most countries in the region. It is also proven by the fact that most political parties, within a context of emergent and/or instable democracies, facing the pressure of urgent demands give no priority whatsoever to environmental concerns in their platforms.

What I would like to suggest then, is that the natural and built up environments should be considered as a social asset, whose potentialities should be exploited, taking into account the need for an inter-generational allocation of the services it provides. It is possible to view the topic of the environmental resources, endowments and assets as a way of linking current short term economic policies with the need for medium and longer term development policies. In other words, what I am suggesting is to look at the crisis as an opportunity. An opportunity to mobilize resources in such a way that it involves a change of the growth style, aimed at the satisfaction of the essential needs of the population and with a view to launching a process of sustainable development.

In order to approach these questions in a positive way it is necessary to distinguish between short-term flows and the substantial endowments of population, natural resources, and of productive assets which have been acquired and built up over the longer term. In other words, taking a broader view of the three classical factors of production: labour, land and capital, we must recognize that the productive capabilities and sociopolitical and administrative abilities of Latin American countries have reached fairly advanced levels in many cases, and cannot and will not be left idle for much more time as a consequence of the external squeeze. The situation must be approached from a political economy point of view, which possesses the advantage of being able to establish links between the accumulated socio-cultural and political capabilities, as well as the spatial, natural resource and environmental potentialities, and with that of the accumulated productive capacity. It also constitutes a bridge to connect medium and long-term development with annual flows and short-term policies. These latter are principally concerned with macroeconomic equilibria: fiscal, monetary, external, employment and income indicators and their socio-political implications and constraints. In our present crisis, the serious external disequilibrium in the short-term flows of income and expenditure requires a considerable restriction of imports, but leads to a pronounced underutilization of the potential of the accumulated sociocultural, natural and productive heritage. This means that we are in the presence of a considerable potential in terms of real resources which may be mobilized (cultural, organizational, material), in so far as such mobilization can free itself as much as possible from its dependence on imported inputs. This does not contradict the fact, mentioned in section A, that those limited resources to which the poor have access, tend to be overexploited.

D. The resource-mobilization approach helps to clarify the problem posed by the passage from a recessionary adjustment to an expansionary one and the transition to sustainable development

The recessionary adjustment essentially involves manipulation of the short term economic policy instruments so that aggregate demand is restricted. Public expenditures are cut back, investments are reduced, wages and salaries are abated, money expansion is reduced and national currency is devaluated. One of the main goals of such policies is to indirectly induce a reduction of imports through a contraction of national income. Besides the greater or lesser success they may have in this respect, there are very serious negative side-effects on accumulation, production, wages, employment and on the utilization of socially accumulated assets.

Instead of unilaterally reducing overall income, demand and imports, an expansionary adjustment strategy would combine an incomes and demand policy that is selectively restrictive with an equally selective resource-based and need-oriented supply policy, taking advantage of those idle productive assets. The point is to change the composition of both aggregate supply and demand so that a mutual adjustment can be reached, with a much lower imported component and a greater efficiency in the use of the accumulated patrimonies.

While recessionary demand policies rely on the market and aggregate macroeconomic policies, with their well known regressive effects given the skewed power and income structure, a selective resource-based and need-oriented expansionary policy must rely on planning and State intervention. In so far as this selectivity and planning aims at an equitable sharing of costs and benefits, it also offers the basis for a political alliance of a democratic character, thereby strengthening the political processes we are witnessing in the region.

- E. The suggested approach is feasible and implies the possibility of changing, gradually but firmly, the prevalent style of development in the region, which is at the basis of most of its environmental problems.

Macroeconomic and socio-political knowledge, experiences and proposals, together with a more detailed knowledge at sector and project levels exist that permit the formulation of concrete proposals for expansionary adjustments, including its specific measures and selective programmes. These involve productive and social programmes, both urban and rural, for small and medium sized business as well as for the informal sector, with emphasis on targets such as alleviating poverty, increasing employment, generating exports and replacing imports, satisfying basic needs, etc. It must also include the corresponding macroeconomic programme with its selective components dealing with demand, taxation and government expenditures, credits, subsidies and other policies of the public sector.

Some of these low-cost and highly useful activities for the generation of employment and social organization in response to the crisis situation are being implemented at present, both by governmental and nongovernmental agencies. They imply a criticism to the prevalent style of growth as they seek to restore the importance of a labour process aimed at satisfying essential needs and reinvigorating the labour force, the environmental and natural resource base, and other underutilized potentialities, while making less use of scarce factors such as capital and foreign currency. Moreover, these activities give rise to a different style of growth and a more vigorous and open cultural identity as a result of the multiple links which connect them with specific geographical and resource contexts, with daily experience, with local knowledge and culture as well as with ecosystemic relations, a long run approach and the requirements of scientific and technological development.

Nevertheless, these opportunities will not be fulfilled automatically and on a sufficient scale: on the contrary, such measures tend to be

adopted strictly within an emergency framework and in partial and ad-hoc circumstances. It is consequently vital, as we mentioned before, to take advantage of the period of crisis which began in 1982 to identify and stimulate the kind of policies mentioned above and, above all, to encourage those conditions which extend and sustain the reorientation of the labour process and heighten awareness and appreciation of the multiple links which have been mentioned.

Local geographical specificity being one of the main characteristics of these activities, the problem of unemployment and that of conservation, protection and improvement of the environment cannot be treated in purely abstract terms; on the contrary, these problems must be treated with reference to concrete locations. Therefore, public activity oriented toward this kind of problems offers a good opportunity for decentralization and community participation, which are issues of special interest and priority in the search for democratic planning and decision-making systems.

Even though the crisis may trigger off a movement of this kind as a short run answer to urgent problems, it is necessary to consider these activities as a starting point for more permanent and properly financed and institutionalized programmes. Specially when we consider that such activities are dealing with essential needs which have been systematically unattended.

In this respect, a priority area for readjustment and reorientation, as pointed out earlier, is the one related to the patterns of investment and consumption as well as the options chosen in the fields of technology and resource management. It will be unavoidable to strongly but selectively limit all kind of demand and technology which directly or indirectly involves a high imported component, and to promote its replacement by goods and services, technologies and designs based on the utilization of local and national human and material resources.

All these orientations will certainly result in a greater use and pressure upon the environment. Therefore, the expansion, conservation, maintenance and protection of the environment can make an essential contribution to the improvement of the standard of living, to employment and to productivity. This necessarily implies a greater knowledge of

the environment's potential, of the ecosystemic conditions for its exploitation, and of the most efficient management formulae so that opportunities may be effectively used. But, at the same time, environmental deterioration and resources depletion must be avoided through sound environmental management and the long run sustainability of the whole process must be assured. All this implies the need to give priority in any future development strategy to the issues of natural resources and technology, adopting a long run ecological perspective.

The emphasis given to the environmentally sound mobilization of Latin American countries' own resources implies the need for a greater differentiation than in the past, not only between countries, but also between regions within each country. It demands a more realistic and pragmatic level of abstraction in development strategies in order to reach more concrete consideration of the real availability of natural resources, technology, each country's size and position, the relationship between population and resources, the energy situation, the degree and features of urbanization, etc. This means that the new development strategies will necessarily have to be different for countries which show marked differences in these aspects; it also means that such strategies, when implemented in a particular country, shall favour regional and spatial considerations (including the urban-rural issue), as each country is made up of a heterogenous mosaic of environmental conditions.

The former requirements imply a great challenge to planners, to their planning methodology and instruments and to the institutional set up of planning at all levels and sectors. The operational capability must be created in order to allow for the consideration of the natural and built-up environment and its ecosystemic characteristics as resources which are scarce and have alternative uses; which can be enhanced, reproduced, destroyed and/or depleted, depending on how they are treated; and which are inter-related among themselves and with human activities in multiple and complex ways.

F. The WCED alternative agenda's main shortcomings: its neglect of the crisis, its problem-oriented and defensive approach, and its rather marginal and implicit reference to the issue of the style of development.

As can be noticed from the previous discussion, I fully agree with the concept of "the mutually supportive relationship between environment and development" stated by the WCED as one of its common perspectives. I also agree with the Commission's key issues, its critique of the standard agenda and most of the advantages argued in favour of the alternative agenda. I will therefore not insist on these aspects, which I consider very positive. Rather, I would like to underline what I see as insufficiencies of the alternative agenda.

One is the neglect of the present debt and development crisis in Latin America, which will have a decisive influence on the future environmental concerns and problems. From the previous discussion it is clear that it is impossible to even grasp the evolution of environmental problems in this region if no consideration is given to the crisis, nor it is possible to think about any feasible environmental strategy.

A second problem is the fact that although the alternative agenda is supposed to replace the standard one, there still remains in it a problem-oriented approach or emphasis. While proposing a change from the "react-and-cure" approach to an "anticipate-and-prevent" strategy, and from "add-on" to "built-in" policies, the new agenda is still addressed to avoid almost the same problems that the standard one intended to cure. Therefore, the WCED's proposal of integrating environmental policy making in planning and executing agencies runs the risk of transferring to the latter the image of the environmental considerations as being "development obstacles".

This takes me to insist on an aspect of the environmental problematique which is seldom considered as such, and that is fundamental for the suggested resource-mobilization approach: the existence of a great variety of unused, underutilized, undetected and underrated environmental resources, particularly in the present recessionary circumstances.

The explicit recognition of this aspect as a fundamental problem in Latin America implies a much greater emphasis on potentialities afforded by the mobilization and use of the natural and environmental resource base for the satisfaction of present and future generations' needs. This is true not only in relation with the environmental resource base, but also with the sociocultural and fixed capital patrimonies.

As we have already mentioned, together with the anticipatory and preventive approach, this means an environmental strategy that is positive rather than reactive and defensive, without neglecting the ecological conditions for sustainability. Such a strategy should be much more credible, relevant and influential among governmental officials and authorities concerned with the "productive sectors", whose criteria, whether we like it or not, will continue to have a decisive influence in the patterns of development and, particularly, on the way out of the crisis.

Therefore, without neglecting the generally recognized environmental problems that may arise from anti-crisis measures, a great effort is needed to take advantage of the opportunities the crisis itself affords in order to privilege resource-mobilizing policies designed with proper environmental management criteria, and seeking a process of equitable and sustainable development. All of this means a fundamental change in the style of development that has prevailed in Latin America since the post war period. Both the need for this change and the importance of the prevalent style in the generation of most environmental problems are almost non-issues in the WCED Alternative Agenda. However it should be recognized that some of the directions included in the examples given when analyzing the key issues of the WCED alternative agenda, implicitly involves a change of style. The importance of this aspect, however, deserves an explicit and central consideration.

Finally, I would like to underline that the approach I have suggested, while involving a substantial change of emphasis, is not necessarily contradictory with the WCED's proposals contained in the Alternative Agenda.

Table 1

LATIN AMERICA: EVOLUTION OF PER CAPITA GROSS DOMESTIC PRODUCT^a

| Country | Dollars at 1970 prices | | | | Growth rates | | | | Cumulative rate | |
|--------------------|------------------------|-------|-------|-------------------|--------------|-------|-------|-------|-------------------|------------------------|
| | 1970 | 1980 | 1983 | 1984 ^b | 1980 | 1981 | 1982 | 1983 | 1984 ^b | 1981-1984 ^b |
| Argentina | 1 241 | 1 334 | 1 166 | 1 177 | -0.9 | -7.7 | -6.6 | 1.4 | 0.9 | -11.8 |
| Bolivia | 317 | 382 | 295 | 288 | -2.1 | -3.5 | -11.1 | -10.0 | -2.2 | -24.6 |
| Brazil | 494 | 887 | 798 | 809 | 4.8 | -3.8 | -1.3 | -5.3 | 1.3 | -8.9 |
| Colombia | 598 | 824 | 804 | 812 | 1.9 | 0.1 | -1.2 | -1.4 | 1.0 | -1.5 |
| Costa Rica | 740 | 974 | 834 | 837 | -2.1 | -4.9 | -9.7 | -0.3 | 0.4 | -14.1 |
| Cuba ^c | — | — | — | — | -1.9 | 14.9 | 2.0 | 4.6 | — | 22.6 ^d |
| Chile | 958 | 1 045 | 895 | 928 | 6.2 | 4.1 | -15.7 | -2.4 | 3.6 | -11.2 |
| Ecuador | 413 | 723 | 678 | 673 | 1.9 | 1.0 | -1.1 | -6.1 | -0.7 | -6.9 |
| El Salvador | 422 | 433 | 344 | 339 | -11.3 | -10.9 | -8.3 | -2.9 | -1.4 | -21.8 |
| Guatemala | 448 | 589 | 512 | 497 | 0.9 | -2.1 | -6.2 | -5.4 | -2.8 | -15.5 |
| Haiti | 90 | 114 | 99 | 100 | 5.1 | -5.2 | -4.9 | -3.1 | 0.4 | -12.2 |
| Honduras | 313 | 356 | 318 | 314 | -0.8 | -2.3 | -5.1 | -3.8 | -1.4 | -12.0 |
| Mexico | 978 | 1 366 | 1 284 | 1 280 | 5.5 | 5.1 | -3.1 | -7.7 | -0.3 | -6.3 |
| Nicaragua | 418 | 337 | 331 | 322 | 6.7 | 2.0 | -4.4 | 0.5 | -2.8 | -4.7 |
| Panama | 904 | 1 174 | 1 214 | 1 188 | 10.5 | 1.9 | 3.2 | -1.8 | -2.2 | 1.1 |
| Paraguay | 383 | 642 | 612 | 611 | 7.9 | 5.4 | -3.9 | -5.9 | -0.1 | -4.8 |
| Peru | 659 | 690 | 593 | 598 | 1.2 | 1.2 | -2.2 | -13.2 | 0.9 | -13.3 |
| Dominican Republic | 398 | 601 | 615 | 611 | 3.6 | 1.6 | -0.7 | 1.5 | -0.7 | 1.7 |
| Uruguay | 1 097 | 1 426 | 1 226 | 1 195 | 5.3 | 1.2 | -10.3 | -5.3 | -3.5 | -16.2 |
| Venezuela | 1 239 | 1 310 | 1 147 | 1 097 | -5.1 | -3.3 | -7.2 | -7.4 | -4.4 | -16.2 |
| Total | 709 | 982 | 893 | 895 | 3.1 | -0.7 | -3.3 | -5.3 | 0.2 | -8.9 |

Source: ECLAC, on the basis of official figures.

^aAt market prices.^bProvisional estimates subject to revision.^cRefers to total social product.^dRefers to 1981-1983.^eAverage, excluding Cuba.

Table 2

LATIN AMERICA: EVOLUTION OF URBAN UNEMPLOYMENT, 1979-84

(Average annual rates)

| Country | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 |
|-------------------------|------|------|------|------|------|------|
| Argentina ^a | 2.0 | 2.3 | 4.5 | 4.8 | 4.1 | 4.0 |
| Bolivia ^b | 7.6 | 7.5 | 9.7 | 9.4 | 12.1 | 13.3 |
| Brazil ^c | 6.4 | 7.2 | 7.9 | 6.3 | 6.7 | 7.5 |
| Colombia ^d | 8.9 | 9.7 | 8.2 | 9.3 | 11.8 | 13.5 |
| Costa Rica ^e | 5.3 | 6.0 | 9.1 | 9.9 | 8.5 | 7.9 |
| Chile ^f | 13.4 | 11.7 | 9.0 | 20.0 | 19.0 | 18.6 |
| Mexico ^g | 5.7 | 4.5 | 4.2 | 4.1 | 6.9 | 6.3 |
| Nicaragua ^h | 21.4 | 18.3 | 15.9 | 18.5 | 18.9 | 19.8 |
| Panama ⁱ | 11.6 | 9.8 | 11.8 | 10.3 | 11.2 | ... |
| Paraguay ^j | 5.9 | 4.1 | 2.2 | 5.6 | 8.4 | ... |
| Peru ^k | 6.5 | 7.1 | 6.8 | 7.0 | 9.2 | 10.9 |
| Uruguay ^l | 8.3 | 7.4 | 6.7 | 11.9 | 15.5 | 14.5 |
| Venezuela ^m | 5.8 | 6.6 | 6.8 | 7.8 | 10.5 | 13.9 |

Source: ECLAC and PREALC, on the basis of official figures.

^a Greater Buenos Aires. Average April-October: 1984, April^b La Paz, 1977, 1978 and 1979, second semester; 1980, average May-October; 1983, second semester;

1984, first semester

^c Metropolitan areas of Rio de Janeiro, Sao Paulo, Belo Horizonte, Porto Alegre, Salvador and Recife. Average for 12 months; 1980, average

June-December; 1984, average January-October.

^d Bogotá, Barranquilla, Medellín and Cali. Average for March, June, September and December; 1984, average for

March, June and September.

^e National urban. Average for March, July and November; 1981, March.^f Greater Santiago. Average for four quarters; 1984,

average for three quarters. As from August 1983 data relate to the metropolitan area of Santiago.

^g Metropolitan areas of Mexico City, Guadalajara and

Monterrey. Average for four quarters; 1984, average for first two quarters.

^h 1979 to 1981, non-agricultural activities; 1982 to 1984, an

estimate.

ⁱ National urban; 1980, urban unemployment recorded in the population census taken in that year; 1981, 1982 and 1983, metropolitan

area.

^j Asunción, Fernando de la Mora, Lambaré and urban areas of Luque and San Lorenzo, annual average; 1981, first semester; 1982, second

semester.

^k Metropolitan Lima. 1970, August-September; 1978, average for July-August; 1979, August-September; 1980, April; 1981, June; 1982, 1983 and 1984,

official estimate for the whole country.

^l Montevideo. Average for two semesters; 1984, average January-September.^m National urban. Average for two

semesters; 1984, first semester.

Table 3

LATIN AMERICA: EVOLUTION OF CONSUMER PRICES

(Variations from December to December)

| Country | 1980 | 1981 | 1982 | 1983 | 1984 |
|--|------|-------|-------|-------|----------------------|
| Latin America ^a | 56.5 | 56.8 | 84.5 | 130.8 | 175.4 |
| Countries with tradition- ally high inflation | 61.5 | 71.7 | 102.8 | 156.6 | 208.0 |
| Argentina | 87.6 | 131.2 | 209.7 | 433.7 | 675.0 ^b |
| Bolivia ^d | 23.9 | 25.2 | 296.5 | 328.5 | 1 682.3 ^b |
| Brazil ^d | 95.3 | 91.2 | 97.9 | 179.2 | 194.7 ^b |
| Colombia ^e | 26.5 | 27.5 | 24.1 | 16.5 | 16.4 ^b |
| Chile | 31.2 | 9.5 | 20.7 | 23.6 | 22.2 ^b |
| Mexico | 29.8 | 28.7 | 98.8 | 80.8 | 59.2 ^b |
| Peru | 59.7 | 72.7 | 72.9 | 125.1 | 105.8 ^b |
| Uruguay | 42.8 | 29.4 | 20.5 | 51.5 | 63.8 ^b |
| Countries with tradition- ally moderate inflation | 15.4 | 14.1 | 12.6 | 17.2 | 17.0 |
| Barbados | 16.1 | 12.3 | 6.9 | 5.5 | 3.9 ^f |
| Costa Rica | 17.8 | 65.1 | 81.7 | 10.7 | 15.7 ^g |
| Ecuador ^h | 14.5 | 17.9 | 24.3 | 52.5 | 19.1 ^g |
| El Salvador | 18.6 | 11.6 | 13.8 | 15.5 | 13.1 ^g |
| Guatemala | 9.1 | 8.7 | -2.0 | 15.4 | ... |
| Guyana | 8.5 | 29.1 | ... | ... | ... |
| Haiti ⁱ | 15.3 | 16.4 | 6.2 | 12.2 | 8.6 ^j |
| Honduras | 15.0 | 9.2 | 9.4 | 10.2 | 6.9 ^k |
| Jamaica | 28.6 | 4.8 | 7.0 | 14.5 | 33.1 ^l |
| Nicaragua | 24.8 | 23.2 | 22.2 | 32.9 | 40.0 ^c |
| Panama | 14.4 | 4.8 | 3.7 | 2.0 | 1.1 ^g |
| Paraguay | 8.9 | 15.0 | 4.2 | 14.1 | 25.4 ^g |
| Dominican Republic | 4.2 | 7.4 | 7.1 | 9.8 | 21.2 ^m |
| Trinidad and Tobago | 16.6 | 11.6 | 10.8 | 15.4 | 13.4 ^f |
| Venezuela | 19.6 | 10.8 | 7.9 | 7.0 | 15.7 ^g |

Source: International Monetary Fund, *International Financial Statistics*, November 1984, and official information supplied by the countries.^aTotals for Latin America and partial figures for groups of countries represent average variations by countries, weighted by the population in each country.^bVariation between November 1984 and November 1983. ^cVariation between September 1984 and September 1983. ^dUp to 1979, figures represent the Consumer Price Index in the city of Rio de Janeiro; from 1980 onwards, the variation in the national total. ^eUp to 1979, figures represent the variation in the Consumer Price Index for manual workers; from 1981 onwards, the variation in the national total, including manual workers and employees.^fVariation between August 1984 and August 1983. ^gVariation between October 1984 and October 1983. ^hUp to 1982, figures represent the variation in the Consumer Price Index in the city of Quito; from 1983 onwards, the national Consumer Price Index, urban area. ⁱThe series presents the variation between September of the year indicated and September of the preceding year. ^jVariation between June 1984 and June 1983.^kVariation between March 1984 and March 1983. ^lVariation between July 1984 and July 1983. ^mVariation between May 1984 and May 1983.

Table 4

LATIN AMERICA: NET FINANCING DISPOSABLE AFTER PAYMENT OF PROFITS AND INTEREST

(Billions of dollars)

| Year | Net inflow of capital | Net payments of profits and interest | Net disposable financing (3)=(1)-(2) | Real net disposable financing ^a | Exports of goods and services | Net disposable financing/ exports of goods and services ^b (6)=(3)/(5) |
|----------------------|-----------------------------|--|--|--|-------------------------------------|--|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| 1973-81 ^c | 21.2 | 11.0 | 10.2 | 15.3 | 64.4 | 15.8 |
| 1982 | 19.2 | 37.6 | -18.4 | -19.1 | 101.9 | -18.1 |
| 1983 | 4.4 | 34.5 | -30.1 | -30.9 | 100.5 | -30.0 |
| 1984 ^d | 10.6 | 37.3 | -26.7 | -26.7 | 113.0 | -23.6 |

Source: International Monetary Fund, Balance of Payments Yearbook (several issues); and ECLAC estimates, on the basis of official figures.

a Obtained by deflating column 3 by the United States wholesale price index, base 1984=100.

b Percentage.

Provisional estimates subject to revision.

c Annual average, for the period.

d Provisional estimates subject to revision.

Table 5

LATIN AMERICA: TOTAL EXTERNAL DEBT DISBURSED

(End-of-year balance in billions of dollars)

| Country | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 ^a |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------------------|
| Latin America | 150.8 | 181.9 | 221.0 | 275.4 | 315.3 | 340.9 | 360.1 |
| Reporting countries | 64.3 | 77.5 | 92.3 | 118.9 | 135.6 | 145.6 | 153.4 |
| Bolivia ^b | 1.7 | 1.9 | 2.2 | 2.4 | 2.3 | 3.0 | 3.2 |
| Cuba ^c | 2.9 | 3.5 | 4.6 | 5.8 | 6.1 | 6.6 | 6.8 |
| Cuba ^d | 33.9 | 39.6 | 49.3 | 72.0 | 85.5 | 90.0 | 95.9 |
| Guatemala ^e | 9.3 | 9.3 | 9.5 | 9.6 | 11.0 | 12.4 | 13.5 |
| Venezuela ^f | 16.3 | 23.0 | 26.5 | 29.0 | 31.0 | 33.5 | 34.0 |
| Non-oil-exporting countries | 86.5 | 104.3 | 128.7 | 156.4 | 179.6 | 195.2 | 206.7 |
| Argentina | 12.4 | 19.0 | 27.1 | 35.6 | 43.6 | 45.5 | 48.0 |
| Brazil ^g | 52.2 | 58.9 | 68.3 | 78.5 | 87.5 | 96.5 | 101.8 |
| Colombia | 4.2 | 5.1 | 6.2 | 7.9 | 9.4 | 10.4 | 10.8 |
| Costa Rica | 1.8 | 2.3 | 3.1 | 3.3 | 3.4 | 3.8 | 4.0 |
| Cuba ^h | 6.6 | 8.4 | 11.0 | 15.5 | 17.1 | 17.4 | 18.4 |
| El Salvador | .9 | .9 | 1.1 | 1.4 | 1.6 | 2.0 | 2.3 |
| Guatemala ⁱ | .8 | .9 | 1.0 | 1.4 | 1.5 | 1.7 | 1.9 |
| Honduras | .2 | .2 | .2 | .3 | .4 | .4 | .6 |
| Nicaragua ^j | .9 | 1.2 | 1.5 | 1.7 | 1.8 | 2.0 | 2.2 |
| Paraguay ^k | .9 | 1.1 | 1.5 | 2.1 | 2.7 | 3.3 | 3.9 |
| Peru ^l | 1.7 | 2.0 | 2.2 | 2.3 | 2.8 | 3.2 | 3.5 |
| Uruguay | .6 | .7 | .8 | .9 | 1.2 | 1.4 | 1.5 |
| Dominican Republic | 1.3 | 1.5 | 1.8 | 1.8 | 1.9 | 2.5 | 2.8 |
| Uruguay | 1.2 | 1.6 | 2.1 | 3.1 | 4.2 | 4.5 | 4.7 |

Source: ECLAC, on the basis of official information; Brazil and Venezuela: ECLAC, on the basis of data from the Bank for International Settlements.

Provisional figures. ^aFigures not comparable with those previous to 1982, owing to the inclusion of the Mexican commercial banks' debt. ^bPublic^cIncluding commercial banks' debt. Estimates on the basis of data supplied by the Secretariat of Finance and Public Credit.^dIncluding the public^eIncluding the total^fShort-, medium- and^gIn the month of September.

LATIN AMERICA: RATIO OF TOTAL INTEREST PAYMENTS TO EXPORTS
OF GOODS AND SERVICES*

(Percentages)

| Country | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 [†] |
|-----------------------------|------|------|------|------|------|------|------|-------------------|
| Latin America | 12.4 | 15.5 | 17.4 | 19.9 | 26.4 | 39.0 | 35.8 | 35.8 |
| Oil-exporting countries | 13.0 | 16.0 | 15.7 | 16.5 | 22.3 | 32.0 | 31.0 | 33.0 |
| Bolivia | 9.9 | 13.7 | 18.1 | 24.5 | 35.5 | 43.6 | 49.3 | 57.0 |
| Ecuador | 4.8 | 10.3 | 13.6 | 18.2 | 24.3 | 30.1 | 26.0 | 31.5 |
| Mexico | 25.4 | 24.0 | 24.8 | 23.1 | 28.7 | 39.9 | 36.7 | 36.5 |
| Peru | 17.9 | 21.2 | 14.7 | 16.0 | 21.8 | 24.7 | 31.2 | 35.5 |
| Venezuela | 4.0 | 7.2 | 6.9 | 8.1 | 12.7 | 21.0 | 20.3 | 25.0 |
| Non-oil-exporting countries | 11.9 | 15.1 | 18.8 | 23.3 | 31.3 | 46.6 | 40.7 | 36.5 |
| Argentina | 7.6 | 9.6 | 12.8 | 22.0 | 31.7 | 54.6 | 58.4 | 52.0 |
| Brazil | 18.9 | 24.5 | 31.5 | 34.1 | 40.4 | 57.1 | 43.4 | 36.5 |
| Colombia | 7.4 | 7.7 | 10.1 | 13.3 | 21.6 | 25.0 | 21.7 | 21.5 |
| Costa Rica | 7.1 | 9.9 | 12.8 | 18.0 | 25.5 | 33.4 | 41.8 | 32.0 |
| Chile | 13.7 | 17.0 | 16.5 | 19.3 | 34.6 | 49.5 | 39.4 | 45.5 |
| El Salvador | 2.9 | 5.1 | 5.3 | 6.5 | 7.5 | 11.9 | 14.2 | 15.0 |
| Guatemala | 2.4 | 3.6 | 3.1 | 5.3 | 7.5 | 7.8 | 7.6 | 4.0 |
| Haiti | 2.3 | 2.8 | 3.3 | 2.0 | 3.2 | 2.4 | 4.9 | 5.0 |
| Honduras | 7.2 | 8.2 | 8.6 | 10.6 | 14.5 | 22.4 | 17.7 | 19.0 |
| Nicaragua | 7.0 | 9.3 | 9.7 | 15.7 | 15.5 | 33.2 | 19.3 | 18.5 |
| Paraguay | 6.7 | 8.5 | 10.7 | 14.3 | 15.9 | 14.9 | 24.3 | 19.0 |
| Dominican Republic | 8.8 | 14.0 | 14.4 | 14.7 | 10.5 | 22.6 | 24.9 | 23.5 |
| Uruguay | 9.8 | 10.4 | 9.0 | 11.0 | 13.1 | 22.4 | 27.6 | 31.5 |

Source: 1977-1983: International Monetary Fund, *Balance of Payments Yearbook*; 1984: ECLAC, on the basis of official data.

*Interest payments include those on the short-term debt.

[†]Provisional estimates subject to revision.

São Paulo, October 1985

São Paulo: Environmental Problems of the Growing Metropolis

- Jorge Wilhelm

The purpose of the present text is to contribute towards understanding, analysis, and measures to be taken in the field of environmental conservation in large cities. The text is addressed to the World Commission on Environment and Development for its meeting in São Paulo in October 1985.

Although there are similarities to the problems that occur in other large cities, especially those in the Third World and in Latin America, the text describes and comments only on the case of São Paulo.

The cultural landscape

Societies, in creating large urban centers, change the landscape of the natural location, creating a cultural landscape which will be, in its turn, gradually altered with the passage of time. During the process of these transformations, the natural characteristics of the site - its land, its waters, the vegetation, its air, its landscape and climate - are used as resources for the construction of a new environment: the urban environment.

Apparently, during centuries of demographic growth and urbanization people worried themselves very little about the process by which natural elements were utilized as means to create an urban environment. The growth of cities being slow, there were time and conditions for maintaining the balance of the local ecosystems, through the re-creation of the resources utilized.

In the last 150 years, however, this balance became disrupted, either because numerous cities began to grow at higher rates or because urban technology introduced excessively effective or excessively destructive ways

to utilize natural resources.

The imbalance of urban ecosystems occurs after a gradual process in which a determined threshold is reached. The perception of this threshold is made by the gauging of levels of discomfort and noxiousness. Just as resources constitute a cultural category, the use of which varies in time and space, so does the level of discomfort constitute a cultural value, only becoming obvious when it reaches the limit of noxiousness, that is, of death. Therefore, the levels of tolerance for discomfort and the demands for quality of life vary, the former decreasing and the latter increasing.

Because of this, it is futile to concern oneself with ideal urban dimensions, deciding upon a fixed 500,000 or one million inhabitants. It is good sense to say that a city with a population of less than one million allows its inhabitants a reasonable knowledge of the whole urban scheme, knowledge that is lost in proportion to the amount the city grows. But from the point of view of quality of life or of environmental impact, the variable "population" should be compared to the variables "per capita income", "density", "cultural habits", "soil conditions", and so forth. For example, ignorance and illness which arise from poverty can cause erosion and sterility and pollution of the soil and waterways even when population density is low, whereas a high-income neighborhood will support high population densities because it probably already has a developed infrastructure.

As well as pointing out above the similarity of the usage of the term "environment" in an urban context, it is appropriate to explain what is understood by "development" for the purposes of this article: it deals with socio-economic transformations that involve:

- a) economic growth with vaster job opportunities;
- b) an increase in the level of the quality of life, beginning with overcoming the sub-human levels now in existence;
- c) the search for social equity, signifying a break in the long-standing concentration of wealth.

The objective of this document, and of the World Commission on Environment and Development, is to subsidize the establishment of strategies that closely relate development to environment. In the urban scope, this relationship will always depend on establishing tolerable discomfort levels,

means to reduce them, social organizations to control and supervise them, and so forth. Far from being an exact science, it is in the much wider arenas of the culture and politics that the foundations for these desirable strategies will be laid.

In order to establish parameters and limits for the debate, it is convenient to create a reference point that will describe the existing situation. To better understand the dynamics of this situation, three aspects will be presented: the pace of urbanization, the expectations of the city dwellers and the observed environmental impact. Three topics for strategies of action that will lead to defined objectives are: population politics, intra-urban politics, and ideological views. These specific topics as applied to the case of São Paulo will not be covered in this paper since such information is lengthy and not relevant to the scope of this meeting.

The Pace of Urbanization

The population of Brazil for 1985 was estimated at 135,564,000 inhabitants. The Brazilian census of 1980 revealed a population of 115,000,000, irregularly distributed throughout the regions of the country, which grew at a rate of 3.5% per year in the last ten years. Considering the total area of the country, 8,511,965 km², in 1985 there is a low average density of 15,926 inhabitants per km². The present urban population of Brazil is estimated to be approximately 67%; in 1970 it was 56%; in 1960 it was 45.1%; in 1950 it was 36.2%. This difference, which clearly shows growing urbanization, varies depending on the region.

In the case of São Paulo, the most dynamic state of the Southeast Region, the urban population reached 89% of a total population of approximately 22 million inhabitants. About half of this population - that is, about 10% of the total estimated population of the country - resides in the greater metropolitan area which includes three municipalities, one of them the state capital, São Paulo.

The network of cities shows a strong polarization of ten with rapid growth: Belem, Fortaleza, Recife, Salvador, Belo Horizonte, Rio de Janeiro, São

Paulo, Curitiba, Porto Alegre, and Brasília. It also shows an irregular distribution of medium-sized cities which could become alternative final destinations for internal migration. Most of these medium-sized cities are located in the more developed regions of the South and Southeast and are sparse in other regions. This suggests a relationship between development and economic and urban growth which will not be gone into here since it is not pertinent to this study. See chart on page 5.

REGIÕES METROPOLITANAS E CIDADES MÉDIAS
(De 60 mil a 400 mil habitantes)

| REGIÕES | População da Região Metropolitana (em mil hab.) | Número de Cidades Médias | População das Cidades Médias (em mil hab.) |
|--------------|---|--------------------------|--|
| Brasil | 24.213 | 147 | 16.519 |
| Norte | 670 | 7 | 836 |
| Nordeste | 3.960 | 42 | 4.695 |
| Centro-Oeste | 537 | 9 | 1.121 |
| Sudeste | 16.677 | 54 | 6.343 |
| Sul | 2.369 | 35 | 3.524 |

CRESCIMENTO DA POPULAÇÃO MUNDIAL
1970-1975

| REGIÕES | TAXA DE NASCIMENTO (p/mil hab.) | | TAXA DE MORTES (p/mil hab.) | | CRESCIMENTO DA POPULAÇÃO (p/mil hab.) | | POPULAÇÃO (Milhões) | | AUMENTO DA POPULAÇÃO (Milhões) | |
|--------------------------------|---------------------------------|------|-----------------------------|------|---------------------------------------|------|---------------------|-------|--------------------------------|-------|
| | 1970 | 1975 | 1970 | 1975 | 1970 | 1975 | 1970 | 1975 | 1970 | 1975 |
| América do Norte | 19,2 | 14,8 | 9,2 | 8,6 | 0,90 | 0,60 | 226 | 236 | 2,04 | 1,42 |
| América Central | 16,2 | 13,7 | 10,6 | 10,5 | 0,56 | 0,32 | 333 | 343 | 1,89 | 1,31 |
| América Oriental | 17,4 | 18,0 | 9,1 | 9,4 | 0,84 | 0,86 | 363 | 384 | 3,14 | 3,31 |
| América Oriental (incl. China) | 30,6 | 19,6 | 12,1 | 7,8 | 1,85 | 1,18 | 941 | 1.005 | 17,43 | 11,11 |
| América do Sul (incl. Índia) | 42,1 | 38,6 | 15,5 | 15,3 | 2,66 | 2,33 | 273 | 317 | 7,40 | 7,37 |
| América do Sul (incl. Índia) | 40,8 | 37,1 | 15,9 | 15,8 | 2,48 | 2,13 | 709 | 791 | 17,57 | 16,00 |
| África | 44,3 | 41,7 | 15,5 | 14,5 | 2,83 | 2,72 | 136 | 155 | 3,91 | 4,22 |
| Ásia | 47,1 | 47,1 | 21,0 | 20,0 | 2,61 | 2,71 | 312 | 355 | 8,16 | 9,50 |
| América Latina | 37,4 | 35,5 | 9,7 | 9,0 | 2,77 | 2,65 | 276 | 317 | 7,64 | 8,59 |
| Oceania (incl. Austrália) | 20,9 | 17,4 | 9,0 | 8,1 | 1,19 | 0,93 | 15 | 17 | 0,18 | 0,50 |
| MUNDIAL | 32,2 | 33,3 | 13,2 | 11,9 | 1,90 | 1,64 | 3.594 | 3.920 | 69,36 | 61,44 |

The future of this urban network does not depend exclusively on endogenous and vegetative growth but principally on the interrelationship of regions diverse in job opportunities and urban services. In other words, the differences between the regions and their urban network, characteristics of a still developing situation, bring on intensive urbanization and constant migration that occur on a larger scale in the direction of large centers found in the Southeast of the country and primarily in São Paulo.

The growth of the metropolis of São Paulo is quite representative of what occurs in Latin America. Demographic information indicates that in 1975 the population growth rate of Latin America, 2.65 per thousand inhabitants, came immediately after that of the Middle East, 2.72, and of Africa, 2.71, surpassing the average world rate of 1.64 for that year.

Besides this demographic growth, data on urbanization rates and the distribution of major world cities indicate an increase of 110% (1960-2000) in the number of Latin American cities with populations of more than one million. Therefore, it is faced with the perspective of population growth, increased urbanization, and growing metropolises.

These calculations correspond to tendency projections that exclude any new important factor, such as changes in national politics, which could influence internal migration. In spite of this limitation, the calculations indicate a sufficiently dramatic challenge: in less than ten years, eight of the large cities in the world will be located in developing countries. At present, twelve of the cities with the highest growth rates are already located in such countries: seven in Asia, four in Latin America (among them, São Paulo), and one in Africa. See chart on page 7.

CIDADES COM MAIS DE MILHÃO DE HABITANTES

| CONTINENTE | 1960 | | 1975 | | 2000 | | % AUMENTO 1960 até 2000 |
|-------------------------------|----------------------------|----------------------------------|----------------------------|----------------------------------|----------------------------|----------------------------------|-------------------------------|
| | % popu- lação urbana | estima- tiva em milhões | % popu- lação urbana | estima- tiva em milhões | % popu- lação urbana | estima- tiva em milhões | |
| U.S.A., Canadá | 34 | 57 | 35 | 84 | 40 | 125 | 17,5 |
| América Latina | 12 | 25 | 30 | 61 | 25 | 143 | 110,0 |
| Europa | 13 | 80 | 15 | 113 | 20 | 189 | 53,8 |
| Ásia | 6 | 102 | 10 | 221 | 20 | 774 | 233,0 |
| África | 2 | 5 | 4 | 12 | 8 | 41 | 300,0 |
| Austrália, Nova Ze- lândia | 25 | 4 | 25 | 5 | 27 | 8 | 8,0 |
| TOTAL | 10 | 234 | 13 | 426 | 21 | 1.285 | 110,0 |

In the year 2000, according to the Population Division of the United Nations (1982), of the 66 cities with over four million inhabitants, 47 are located in the Third World (ten of which are in Latin America), thirteen in developed capitalist countries, and six in countries with collectivist economies. São Paulo, which is now the third largest city in the world, after Mexico City and Tokyo, will be in second place.

Urban growth and population concentration in larger cities seem to be a constant trend in Brazil. Comparing the 1950 census with the 1970 one, the following increases are found:

- a) cities of up to ten thousand inhabitants: 100% increase in number and in population
- b) cities of ten to fifty thousand inhabitants: 150% increase in number and approximately 300% in population
- c) cities of fifty to 200 thousand inhabitants: 4.5 times the increase in number and over five times the increase in population
- d) cities of 200 to 600 thousand inhabitants, excluding metropolitan centers: eight times the increase in number and ten times the increase in population.

The population estimates for the city of São Paulo and its metropolitan area up to the year 2000, based on projections considered most probable - constant

fertility rates, decreasing migration and death rates - are as follow:

| ANO | SÃO PAULO (Região Me- tropolitana) | TAXA GEOME- TRICA a.a. (%) | SÃO PAULO (Capital) | TAXA GEO- METRICA a.a. (%) |
|------|--|----------------------------------|------------------------|----------------------------------|
| 1970 | 8.143.000 | | 5.930.900 | |
| 1975 | 10.177.000 | 4,5 | 7.186.000 | 3,7 |
| 1980 | 12.341.000 | | 8.584.400 | |
| 1985 | 14.570.000 | 3,3 | 10.094.400 | 3,0 |
| 1990 | 16.793.000* | | 11.692.800* | |
| 1995 | 19.200.000* | 2,1 | 12.500.000* | 1,4 |
| 2000 | 21.416.000* | | 13.130.000* | |

The Brazilian urban network is the result of four centuries' accumulation of wealth through well defined economic cycles and processes. It is reasonable to assume that birth rates tend to decrease as a result of education and undirected family planning. Conditions to amplify public health services do exist, particularly if there is a more even distribution of wealth.

Nevertheless, although comprehensive government incentive policies to reduce regional disparities and consequently reduce migration may be developed, the results of many years of migrational flux towards the Southeast and the intensive urbanization of the region must still be confronted.

The pressure of internal migration on the growth of large cities, chiefly in São Paulo, decreased in the 1970's. Since the middle of that decade, natural growth has surpassed immigration as a main growth factor in São Paulo, both in percentages and in absolute terms.

In the projections for the year 2000, it is estimated that in the last five years of the century the growth rate will decrease to 1.4% for the municipality and 2.1% for the metropolitan area. Within these rates, immigration will have a progressively smaller role, but natural growth will maintain the value positive.

The fact must be faced squarely that the metropolis, with all of its problems, exists. The most serious aspect is not that of residual growth but of the size and scope of the problems already apparent.

São Paulo: Estimativas de populações para 1990 e 2000

| | 1970 (19 de julho) CEISO | 1978 Hipótese mais provável | 1990 | | 2000 |
|----------------------|--------------------------------|-----------------------------------|------------------------------------|------------------------------------|------------------------|
| | | | Hipótese mais provável (1) | | Hipótese mais provável |
| | | | | | |
| Estado | 17.692.000 | 21.968.000 | F-md M-md m-mí 28.219.200 | F-mx M-mí m-mx 33.457.800 | 40.610.200 |
| Região Metropolitana | 8.143.000 | 11.503.000 | F-d M-d m-k 16.793.000 | F-k M-d m-k 23.920.100 | 21.416.500 |
| Capital | 5.931.000 | 8.023.000 | F-k M-d m-d 11.692.800 | F-k M-d m-k 14.340.700 | 13.602.900 |

Fonte: Fundação SEADE, 1979.

1) F = fecundidade; H = mortalidade; m = migração; md = média; mí = mínima; mx = máxima; d = decrescente; K = constante.

Expectations of the City Dwellers

Since internal migration seems to be the most dynamic variable in the phenomenon of urbanization, it would be useful to include some observations about the expectations of a typical immigrant who has decided to start a new life in the region that was called, before the current recession, ironically but with envy, " The Marvelous South ".

Only one language, without dialects, is spoken throughout Brazil. The customs are relatively homogeneous. This appears important when compared to the differences which exist in Latin America along the Pacific Ocean where descendants of the indigenous culture are clearly obvious in large cities because of their traditional dress, customs, and unwritten language.

Considering its vast area, Brazil has no physical obstacles such as high mountain ranges or interior seas which prevent anyone from reaching roads or from crossing the country, as long as he does not intend to enter the Amazon jungle. This leaves a relatively large area to be traversed and a vast network of cities to be established.

What leads an inhabitant of one region to re-locate in another? Firstly, dissatisfaction and uncertainty in the region in which he lives. Difficult climate conditions and the lack of job security together with the difficulty of owning land and the rigor of pre-capitalist work conditions in the countryside constitute common mobilization factors. As the Brazilian author Antônio Candido de Mello e Souza states, " when the poor manual laborer feels the unbearable pressure of poverty, he does not revolt; he re-locates ". This phenomenon would be unrealistic in a small country or an island, but in a country the size of Brazil, it is a viable alternative.

Besides being aware of the large stretches of contiguous land available, the immigrant is aware that he could have a better life in another place when local conditions appear impossible. Radio and television have had great influence in creating an attractive image for the South in general and for São Paulo in particular.

The capital of São Paulo grows more slowly than the municipalities on the periphery of the metropolitan area. One of the consequences of immigration to São

Paulo was an increase in adult population, contributing to higher productivity and, indirectly, to accelerated migration.

What sort of work does the population of Greater São Paulo do? According to the 1980 census, the economically active population of 8,493,226 inhabitants has .3% in rural activities, 41.13% in industrial activities, 22.3% in services and 12.09% in commerce. This area has the highest employment rate of any large Brazilian center. However, from 1980 on, the recession brought on by the former federal government caused high unemployment, estimated at 18%. The national capital of employment became the national capital of unemployment. Although this year some rates have begun to rise, the impoverishment of the population is a documented fact.

In these circumstances, what do all these immigrants hope to find in São Paulo? And to what point are their dreams realized? A recent study indicates three principal factors which attract people to São Paulo: job opportunities, public health services, and better school systems.

These are the objective expectations, linked to survival and the possibility of "improving life". At the same time, mass media portray the image of the Marvelous South and mainly São Paulo as a modern metropolis where all one's dreams can come true - skyscrapers, cars, cigarettes, machines, a life full of pleasant surprises, brilliant mechanisms, comfort. Television offers consumer products and gives them a sensual, if not erotic, connotation. All these ingredients form a concept of lifestyle. For the immigrant, living this lifestyle becomes his goal; job opportunities and profit must be taken advantage of. The immigrant believes that only courage, aggressiveness, and tenacity are necessary to realize his dreams. However, this lifestyle implies a strong dose of individualism, a characteristic that results in a loss of fellowship and community interest. Unfortunately, this is a typical situation in a metropolis.

This individual manner of urban conquest frequently results in minimum interest for public issues and in an abusive exploitation of land and property. Nevertheless, it is essential to note the large number of neighborhood associations, corporate associations, and social movements that have appeared in the last decades, perhaps as a civilian society's answer to government repression and authoritarianism. These organizations, very visible in the current stage of redemocratization, have a close

relationship to and compete with the political parties in the search for better representation for public anxieties and for participation in government decisions.

Real estate speculation was not the result only of a few capitalists' hunger for profit; it was allowed - when not directly encouraged - by the absence of adequate legislation. It is frequently applauded by a population which on a small scale often experienced "growing rich while the city grows". Land was purchased and held in wait for improved public works. Inflation and natural growth also contributed to the great appreciation of real estate.

The immigrant is a "conqueror" and his urbanization represents an individual conquest of opportunities, consumer goods, and land. As Lefevre says, "the city is a place of consumers and a consumer of places". This arduous individual conquest is responsible for the dynamic urban life which exists in São Paulo. However, during all this adventure of conquest, the immigrant remains fearful that he will be forced to return to his former life or that his dreams will be frustrated. He grabs the first possible job in order to gain security and the certainty that he will not be forced to leave São Paulo. Even so, his last desire for security remains: to be the owner of his own home, that is, to be the owner of a piece of this coveted land. To the immigrant, owning a home represents being a land owner, a well-known symbol of security. The profitable commercial activity of slicing up and selling the land arose to meet this demand, marking the beginning of environmental impacts on the urban environment caused by development.

So while on the one hand, the economic system in effect creates conditions and rules for urban land use, on the other hand, the expectations of the immigrant conqueror also contribute to aggressive urban dynamics, whether in interpersonal relationships or in relationships with the environment.

Resulting Environment Impact

What has been the environmental impact of this process of growth in a metropolis such as São Paulo? Eight environmental impacts will be considered: deforestation, erosion, flooding, pollution of the "home", water pollution, air pollution, sound pollution, and the loss of valuable landscapes and monuments.

The first impact to be considered is deforestation. The state of São Paulo now contains only 3% of its original forests, and its capital city caused massive ravages. The absence of urbanization norms until the middle of this century and the tardy appearance (1976) of protective legislation for water flowing in the metropolitan area allowed the legal and indiscriminate destruction of trees. Until 1975 the ratio of green areas to inhabitants in the capital was 1.8 m² per person. In 1970 because of the incorporation of new public green areas, this ratio rose to 2.1 m² per person. The incorporation of a large tract of land to be used as a future park caused this index to reach 3.8 m² per person by 1984. In the meantime, innumerable public squares, existing legally on paper but not yet established, ended up being invaded by shantytowns, which were on the rise as a result of high unemployment caused by the recession. The new Master Plan for Greater São Paulo (Plano Diretor) in 1985 proposed an increase of the index to 6.9 m² per person by the year 2000 through the creation of, among other things, six new parks.

Nevertheless, it is not simple to quantify this environmental impact. How much green area is necessary for each inhabitant and why? The U.N. parameters - 12 m² per person - are empirical and were never related to specifics about well-being, physical and mental health, oxygen levels, and so on. It is supposed that green areas constitute positive values and that 15-20% of the land be allocated for them. It is a cautious and welcome norm. But if these areas are not prepared, planted, and maintained and there are no walkways, benches or sufficient illumination, - that is, if the areas are not used - their value as an urban element that improves the quality of life will be reduced. They will merely exist as potential public space which, depending on social and political pressures, could be designated for habitation and cease to be green areas.

The worth of urban green areas is clearly a cultural value; it cannot have the same significance in a small village in the middle of the African jungle that it has in New York or São Paulo. What is the city dwellers' perception of the problem? Housewives' resistance to home gardens is found all along the periphery, either because the lots are too small or because the women are fighting the dust that invades their homes. Groves of trees, gardens, and wildflowers are all perceived as having positive value as long as they are public and far away. Wax or paper flowers or flowered tiles are

all that is allowed inside the house.

The situation has been gradually modified in the past few years as a result of policies giving more value to the resources of physical space within a city for private and community gardens. The great number of ecological and conservationist groups and the dispersal of their ideas by the mass media have also helped alter concepts. The intense planting of shrubs, flowers, and trees along streets during the present administration has contributed to a greater appreciation of green areas. Nonetheless, we are far from a predominant view of their having real importance in urban settings.

I am unaware of research on Latin America city dwellers' perception of green areas. Therefore, I will limit myself to a few hypotheses. In the first place, for the poor immigrant, the image of modernity is asphalt, anti-green. Trees and land are the "uncleanliness" of his past, the past he rejected when he moved to an urban area. In the second place, during the phase of European colonization in Brazil, civilization and culture signified victory over the jungle, home of the enemy: snakes, insects, and Indians. Civilization signified felling trees. In the third place, the awareness of the worth of green areas has reappeared only now in the measure that society becomes more urban, altering and destroying the ecosystem.

The environmental impact of deforestation and urban aridity had to reach serious extremes in order for the problem of this loss in the quality of life to become widely perceived.

The Master Plan For Greater São Paulo (Planº Diretor) developed in 1984-85 clearly identifies the environmental problems present: floods, poor quality of air, and erosion. It adds another factor as well: temperature. It has been proven that increases in temperature which reach differences of up to 3º in certain neighborhoods occur as a result of widespread paving, the absence of vegetation, and the heavily congested traffic.

The second type of environmental impact stemming from urbanization is erosion. Dividing up land into lots and selling them was the biggest business in the city. The constant demand, guaranteed by immigration and the availability of land, has caused the city to spread much like an oil stain, filling in areas

around already established structures. However, as the city grew, the direct costs of transportation and the indirect onus of the lack of equipment and infrastructure caused the price of land to vary greatly. The market value is not intrinsic to the land; it depends on the location and the profit that can be made by building something on that land. The proximity of transportation, jobs, and services caused the price of lots to increase so much that the poorer population has been pushed further and further away and the land has been divided into smaller and smaller lots.

The conflict among requirements of a minimum size for lots, the high demand for land and the possibility of making an easy profit brought about the proliferation of clandestine land transactions. These divide up urban land without any concern for the entrapment of rain water, without any accurate documentation, and without any infrastructure - a lucrative adventure that quickly provides poor owners with miniscule lots in dangerous conditions and with no physical or legal guarantees. It is a business which exploits the needs and the ignorance of the poor and devours urban land.

This clandestine way of dividing up and utilizing the land makes it difficult, if not impossible, for the municipal government to keep up with urban expansion. The streets do not have curbs, gutters, drainage systems, or pavement. Rains open furrows, carry away soil, clog existing pipelines, and cause mudslides and floods.

In 1984 the Master Plan for Greater São Paulo (Plano Diretor) pointed out that 6,348 km of roads, 45%, needed to be paved. The present government has managed to pave 1,097 km in thirty months through the use of community work gangs.

Urban regions exist where it is deemed important to forbid removal of plant cover, division into lots, and construction because if these were allowed, the combination of steep sloping, heavy rainfall, and soil fragility would inevitably cause severe erosion and flooding.

In the case of São Paulo, the third environmental impact is flooding. Only 23% of the 1,552 km of waterways are channeled; the rest have unprotected banks which are subject to cave-ins. There are 420 locations where flooding occurs regularly, affecting to some degree the 15,000 homes and buildings, some constructed legally and others not, that are found near these waterways.

Unfortunately and inadvisably, many people settled along the rivers in São Paulo. These rivers are slow and meandering since they are near their sources. After 1950, some watercourses were channeled during the process of urbanization and thus altered the flow of the Tietê River, the major stream of the region. Along with this gradual change in the river's flow, until the present administration took charge, it was standard practice to pave much of these river valley settlements. This caused a loss in the land's absorption capacity and further altered the natural hydrologic system. The present administration has begun to modify this situation and intends to establish park areas along the river valleys.

The fourth environmental impact, "home" pollution, is related to flooding. This is the pollution of the land on which people live by the people themselves. Since the miniscule lots previously described rarely have systems of piped water or sewage, the owners dig wells and cesspools which are often so close together that the well is inevitably contaminated by the cesspool. This situation became so grave in São Paulo in 1975 - 76 that a large campaign to close down the wells was undertaken; 20,000 domestic hook-ups to the public water system were made each month for fourteen months. Only because of the campaign was this potentially disastrous public health problem controlled. Infant mortality, in large part a result of contaminated private wells, decreased in São Paulo from 103 per thousand inhabitants to 62 per thousand in the period of January 1976 to January 1978. In 1980, this decreased to 52 per thousand due to additional sanitation works and to the construction of public health clinics and day care centers. The recession and the resultant increase in poverty, however, brought about a rise in infant mortality in 1983-84 which the present state government has managed to bring down to 38 per thousand this year.

The fifth environmental impact is water pollution. São Paulo's sewage system can never keep up with the city's growth rate. When the ancient Roman method of having a central sewage deposit is used, it becomes extremely difficult for the system to accompany any population growth beyond the vegetative. In São Paulo, only 45% of domestic sewage is collected by the present central system. Of this, 4.5% is treated, but only in a very basic way; the treated water released is still considered polluted. The rest of the sewage, including that

from hospitals, flows into the 1,200 km of watercourses, channeled or not, until it reaches the larger rivers (the Tamanduateí, the Tietê, and the Pinheiros) which at present are open-air sewers - dead rivers without oxygen that demand immediate and drastic overhauling in order to prevent a further accumulation of pollutants which could, in fifteen years, cause such a diminished flow of the rivers during droughts that it would be necessary to completely cover the river surface, in effect burying it.

It would be simpler if we could verify that urban water pollution originates only from industries, for then the burden of treatment or re-location would rest with them and the environmental problem would be solved. However, although CETESB has measured and thus established the amount and location of industrial water pollution, there remains the " river death " brought about by " home pollution ", a direct result of the existing conditions and rapid growth of the metropolitan area.

The environmental damage caused by deficiencies in the sewage system is very serious although it passes unnoticed by the residents of neighborhoods serviced by this system. The solution does not depend solely on funding and public works; it is the expensive and inadequate technology being used which needs to be questioned. While developed countries, which have only residual deficiencies, could not consider revamping the entire system, Third World countries, which are virtually starting from scratch, should investigate technology now available for

- a) decentralized biological treatment,
- b) genetic engineering and the possibility of developing bacteria to purify wastes
- c) decentralized bio-energy stations, and
- d) new designs for septic tanks.

The sixth environmental impact is air pollution. It is produced by four groups of pollutants: particulate matter, sulphur dioxide, carbon monoxide, and photochemical oxidants. The daily pollution emission in Greater São Paulo is the following: 500 tons of particulate matter, 70% from industries; 900 tons of sulphur dioxide, 90% from fuel combustion; 5,000 tons of carbon monoxide, 90% from vehicular traffic ; 750 tons of hydrocarbons, 70% from vehicular traffic and 15% from industries; and 400 tons of hydrogen dioxide, 80% from vehicular traffic. Fifty-three industries are responsible for 87.9% of the particulate matter pollutant. The problem of vehicular traffic, which was responsible for approximately half of

the air pollution, was substantially reduced when 25% of the passenger vehicles switched from gasoline to alcohol fuel. In 1984 the total number of vehicles circulating in São Paulo was 2,189,764.

CETESB has emergency plans for warnings and shut-downs of traffic flow, but the pollution levels which would demand these emergency actions have not yet been reached. It is obvious that these precautions are no solution to the problem. In the winter, when rains stop and winds decrease, São Paulo is covered by a reddish blanket of smog, comprised of diverse air pollutants, which causes eye irritations, coughs, and general physical discomfort. The situation, however, has not worsened.

The environmental impacts cited above reveal some of the noxious effects of industrialization; nonetheless, they also show that industry is not the sole culprit of assaults on the environment.

The seventh environmental impact is sound pollution. Urban noise has increased since the Industrial Revolution due to the introduction of machines and vehicles and the increased population density. An interesting experiment done at a North American university in which the auditory acuity of the population has been measured for more than one hundred years reveals that this acuity is constantly decreasing. Man defends himself from increasing noise levels by gradually becoming deaf. It may be too early to draw conclusions, but it is undeniable that in the last two or three generations, popular music has become louder. Advanced technology in sound-reproducing equipment has made young people today accustomed to "hearing" music at decibel levels far above what their parents or grandparents were accustomed to.

The psychological and cultural impact of sound pollution should not be belittled; the tympanic membrane in the middle ear becomes used to prolonged high-volume sound levels and is no longer able to "hear" the rustling of a leaf or a murmured word. Moreover, in an environment so bombarded with noise, there is no way to talk, and in a society bombarded with mass media communication, talk is vital to insure the formation of free opinion. And how do we substitute silence, so necessary to city dwellers, in times of concentration or introspection?

Finally, the eighth environmental impact caused by urbanization is the destruction of cultural values. We have seen that urbanization alters the natural site and transforms it into a cultural or urban environment. As it grows, the urban environment itself is altered by the substitution of one building for another, by the change in use and function of a determined building, or by the razing of buildings as a means to open more public space.

History has given us important examples of these urban transformations. They appear to have been possible and gradual when the growth rates did not exceed 4-5% per year. But when the rates reach up to 10% per year, as happens in São Paulo and other large Latin American cities, the city explodes: it not only grows, it re-creates itself. When the growth rate is high, the lack of roadways, especially paved roadways, increases, as does the lack of all components in the infrastructure. The high commercial value of certain urban areas stems from the limitations of the infrastructure and justifies, from a capitalist point of view, the demolition of a twenty storey building to put up in its place one with forty storeys. The greed involved in real estate transactions, supported by the economic systems and the growing demand, bring about urban self-consumption; in São Paulo, a city founded in 1554, it is difficult to find even half a dozen buildings dating from the last century and few that date from before 1930.

Cultural value in its widest sense does not apply only to a building with historical or aesthetic value, but also to structures that have special significance to some social group, landmarks which are sites of community activities which serve to strengthen the bonds between people and the urban environment.

A photography contest and exhibit was held in 1977 that allowed citizens of the State of São Paulo to identify objects of cultural value in their cities which they wished to preserve. The selection included old buildings, stairways, alleys, monuments, trees, and lamp posts. Later, in 1984-85, an inventory of these objects for the North and East Zones of the municipality of São Paulo was compiled. Although this was carried out by specialists from the Ministry of Planning, the decisions were made by the general public. The current administration has sought to guarantee the preservation of such

landmarks by classifying them and by allowing their intrinsic value to increase the commercial value of surrounding land.

Similarly, an inventory of all significant vegetation in São Paulo was completed and now needs to be protected by legislation which will also allow the commercial value of surrounding land to rise.

The destruction of landscapes, monuments, and landmarks constitutes a serious environmental impact on a metropolis, especially when half of its inhabitants were not born there, as is the case of São Paulo. The metropolis cannot function on a day to day basis as a whole; a certain grouping of elements which make up the usual, daily, familiar environment of each person must be identified. There are many possible combinations of these elements, but each person puts together his own grouping depending to a large extent on his individual feelings about what constitutes his "space". This balance between the individual and the space he occupies is an important factor in the quality of life.

In summary, in the Third World, the phenomenon of a rapidly growing metropolis causes undesirable environmental conditions. In the case of São Paulo, people live in a sprawling city which is noisy, polluted, has dangerous levels of public health, and does little to preserve cultural landmarks. For those residents in a high income bracket, the modern aspects of living in São Paulo compensate for some of the loss in quality of life. But for those residents in low income brackets - for those, living in poverty in areas plagued by floods, whose children are subject to pollution - related diseases, - the environmental impacts of urbanization worsen a condition which is already precarious due^{to} an unfair distribution of wealth and opportunities.

Since there is now a reasonable awareness of the gravity of the problems, this situation is being confronted. The new Master Plan (Plano Diretor) correctly analyzes the risks and proposes a strategy of action, the implementation of which depends on political factors.