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The Physical-Social Unbalance

Today the majority of the so called "developing countries" are trapped in Technological backwardness of low intensive technological exports and urban population explosion. Their only option must be simultaneously to stabilize their urban population and modernise their production and exports with more technological input. Of course, they have been trying to do this -achieve economic and social development- searching for El Dorado for more than half a century, but without success. Instead, they acquire the characteristics of Non-viable National Economies (NNE). All the so-called "developing countries" have been forced to survive during nearly the entire twentieth century on international aid, official loans and credits from private institutions, continually falling into insolvency and national bankruptcy.

For more than 10 thousand years the planet's population was settled in rural areas. In a short time, that will no longer be the case. About 65 per cent of the planetary population, some 4 billion people, will live in thousands of cities, spread over all the continents. The most worrisome fact is that 90 per cent of this explosive city growth will occur in this Non-viable National Economies (NNE) and all their new poor cities will suffer scarcity of food, energy and water. For this, it is urgent to establish a physical-social balance between population growth and vital resources like food, energy and water to maintain a calm sociopolitical atmosphere and not to impede the collapse of many countries in Ungovernable Chaotic Entities (UCEs).

Until now, the whole focus on problems of the underdeveloped world assumes that the future of the poor countries is determined by socioeconomic causes more than by natural and ecological causes. This traditional view is the product of an ideology of progress that since the Industrial Revolution has forgotten nature. Today nature is coming back to take its revenge accompanied by resource scarcity and climatic change, at the very moment when an urban population explosion is assailing the planet.

By the year 2020, the population of the poor countries will have nearly doubled, reaching 6.6 billion, and it will be largely urban. Unless a drastic, unprecedented fall in the birth rate occurs and is coupled with an unprecedented rise in the supply of food, energy, water, the greater part of the population of the underdeveloped world will live in chaotic cities and megalopolises with millions of poor beset by malnutrition, pollution, lack jobs and violence.

The fact that poverty in the underdeveloped world is beginning to change its rural environment to become increasingly urban is a matter for grave concern, since this new poverty will be more destabilizing than the traditional rural sort. This urban poverty is concentrated in a space where the lack of food, water and energy is more acutely felt and where, besides, poverty lives in close proximity to wealth. It is hardly surprising that today nearly all the cities of the underdeveloped world suffer a growing plague of delinquency and that they breed fanatical and fundamentalist movements.

For nearly all of Africa for some countries of Central America, the Andean region, the Middle East and Asia, the great challenge for the beginning of the twenty-first century will not be national development. It will be, instead "national survival". In other words, it will be a question of avoiding further disintegration of the social fabric, as well as preventing the collapse of the project of the nation-state in a ungovernable chaotic entity (UCE). These countries' governments and their incipient civil societies will have to expend an enormous effort to establish a physical- social balance between the supply of food, water and energy and the size of the population.

Food

Every country that imports food today should remember that the agricultural land per capita on the planet has diminished by 7 per cent since 1979. The soil does not produce as it used to: this is the result of fertilizer saturation, salinity caused by bad irrigation, and desertification from deforestation. In addition, agricultural lands are being devoured by the unstoppable urbanization of the planet.

Agricultural production has started to decline in nearly every developing country. According to the World Bank, in nearly eighty poor countries, food production has lost the race with population growth.

The most populous countries on earth, China and India, will begin to import an appreciable amount of food in the new century, in consequence of their urban expansion and environmental problems like soil erosion and increased salinity. These imports will further augment demand and raise the world prices of these products, affecting in this way all the other countries that import them. Then, many poor countries will be forced to beg for more international food aid, to avoid serious political upheavals.

Another phenomenon that will affect the supply of food and influence its price is the expected fall in production of the most important world source of proteins; that is, fish. The seas are being depleted, and many species are becoming extinct. Since 1989, the supply of fish per inhabitant has been reduced by 8 per cent and the catches are smaller, from Iceland to Namibia, from Chile to California. The fishing fleets, with 23 million tons afloat, employing 15 million fishermen and operating with high-definition sonar and gigantic dragnets, are practically clearing the seas of fish.

All these trends are matters of grave concern: by the year 2015, agricultural production would need to have increased by 75 per cent, in order to fill the nearly 8 billion hungry mouths on earth. This does not mean that we have embarked on a course that will carry us into a huge world-wide famine. The specialists hotly dispute that probability. However, they do agree that the world has entered a new era in which satisfying the food demands of the nearly 70 million human beings that are born each year in the poor countries will be more difficult and more expensive than it was in the past.

Water

Water to produce food and supply industrial and human consumption is scarce and difficult to access in vast areas of the globe. Some 97 per cent of all the earth's water is saline, only 3 per cent is fresh and three quarters of that is concentrated in inaccessible geographical areas, such as polar regions and glaciers. As a consequence, only a small fraction of the planet's water is both fresh and accessible in rivers, lakes and underground water tables. According to international hydrological studies carried out by the United Nations and the Stockholm Institute for the Environment, even this small fraction is diminishing and in the year 2025, two thirds of the world's populations will be affected by water shortage. This is due to the diminishing of the earth's hydrological cycle, caused by the urban population explosion. The symptoms of a water crisis are already visible: underground water, lakes and rivers are shrinking all over the world.

Water security, always a condition for the existence of a civilisation and a nation-state, has begun to disappear in many countries. According to the UN report cited above, already today more than 2 billion people suffer water shortages in more than 40 countries. The World Bank estimates that 1 billion persons already live without enough drinking water and 2 billion lack sanitation. The lack of drinking water and sanitation is condemning millions of the inhabitants of underdeveloped cities to sickness and premature death. Having a safe water supply is becoming a decisive factor for national survival.

The United Nations considers that the minimum requirement for a healthy and active life is 2,000 cubic meters of drinking water per year. The countries with water resources already close to that limit for survival are: Algeria, Burundi, China, Egypt, Ethiopia, Haiti, India, Jordan, Kenya, Morocco, Oman, Pakistan, Peru,

Rwanda, Sri Lanka, Yemen and Zimbabwe. In the year 2005, many cities of these countries will have only half the amount of water that they had in 1975. The most seriously affected will be the large cities, such as Algiers, Amman, Cairo, Casablanca, Lima or Tunis.

There is no doubt that the problem of water supply, both for agricultural use and for the urban population, will become more political in the twenty-first century. This be due, in part, to the insatiable thirst produced by the world urban demographic explosion and, in part, to the need for irrigation to produce more food for the cities. In an urbanised planet, with nearly 8 billion inhabitants by the year 2020, water will be as strategically vital for living as petroleum. Hence, it would not be at all surprising if its scarcity were to provoke national and international upheavals reminiscent of the oil crises of the twentieth century. It is very possible that capturing water sources or polluting reservoirs may become strategic objectives of war plans and of terrorist attacks.

It is also very possible that water shortage may cause domestic upheavals in mega-countries like China and India, where urban expansion is continuing at full steam. In China, there is already a dire scarcity of water in nearly twenty-two large cities. Millions of Chinese are migration towards the coastal cities, depopulating the countryside of farmers, and consuming in the cities part of the water that was used for food production. India is in no better condition. Drought and lack of water are persistent, because of soil erosion caused by deforestation which is itself caused by the search for firewood. This is also causing serious problems for the agricultural sector and for the mega cities of India, making it necessary to use increasingly the exhausted volumes of the Brahmaputra and the Ganges rivers.

Disagreements over the use of the great international rivers can generate international conflicts. The waters of the Tigris and Euphrates rivers, which are being dammed by Turkey to irrigate the region of Anatolia, are also vital for the survival of Iraq and Syria. If the three countries do not reach a tripartite agreement on their use, this failure may very well cause a conflict in the future. In the case of Israel, Syria, Jordan and the Palestinians, agreement on the distribution and use of the Jordan river, which have not yet been defined, would doubtless be a fundamental condition for a durable peace among them. A conflictive situation could also arise around the use of the Nile's waters by Egypt and Ethiopia, since the dam that the latter country is planning to build would use part of that river's waters, which have been vital to Egypt since Pharaonic times.

No one should doubt that in the new century a very low quantity and quality of water available per capita will be a clear international indicator as to which countries are definitively non-viable since they lack the most elemental resource for survival on the planet.

Energy

All the poor countries try to copy the consumption patterns of the wealthy industrialised nations. The urban modernity they try to emulate, that I call "the California model" implies a growing consumption of petroleum, a non-renewable and polluting source of energy.

Due to these consumption patterns and to urban population growth, the voracity for petroleum of the underdeveloped countries is such that countries that once were self-sufficient and even medium exporters of oil have become net importers of it, endangering their energy security.

Even countries that have gas deposits and other fuel sources cannot avoid importing oil, because of the difficulties involved in converting all the industry and transport of a country to other sources of power. This is why it is calculated that the oil consumption of the underdeveloped countries will continue to rise by 5 per cent per year, bringing the demand for petroleum in the poor regions of the planet to over 50 per cent of the total world demand this century.

Despite the high rise in demand, there are no indications of a possible cutback in the world oil supply,

because the world reserves will suffice until the middle of this century, unless a major international conflict should break out affecting the Gulf reserves. Nevertheless, the prices of petroleum and of energy will rise gradually in the long run, not only because of growing demand, but also because extraction costs will be higher. Additional costs will also arise from the geographical location and the geological condition of the new and the old deposits, as well as from the use of environmentally friendly technologies in processing fuels and in all domestic or industrial transport systems.

It would appear that this price increase will not be sudden, nor will it produce world energy crises like those of 1973 and 1980. Rather, there will be a series of national shortages and energy crises that will affect many of the poor countries. This will be especially hard on those that have rapid urban population growth and that, in spite of having increased their oil imports, continue to register the lowest annual per capita energy consumption in the world, between 200 and 600 kilos (the petroleum consumption per capita of an Asian NIC is almost 2,000 kilos).

The countries that have the lowest per capita energy consumption in the world also import food, all sorts of consumer goods and capital. This will make it ever more difficult for them to continue importing increasing amounts of oil, in order to increase the per capita consumption, given the dwindling value of their exports (based on primary products and manufactures with low technological content). Energy shortage could then become a structural crisis and turn many of these countries into non-viable national economies.

Although it is understandable that no one in the poor countries wants to relinquish the dream of the rich countries consumer society, it must be admitted that nothing is more irrational than to try to globalize the California model, based on intensive use of a highly polluting source of energy: fossil fuels. The poor societies would have to reach a per capita consumption of fossil fuels that approached the North American or the European rate. Try to imagine a great part of the African continent, Asia including mega countries such as China, India and Indonesia, and all of Latin America, that is, three-quarters of the world's population, consuming between 4 and 7 tons of petroleum per capita and expelling into the atmosphere millions of tons of greenhouse gases, to add to those accumulated since the Industrial Revolution. The atmosphere would be still more loaded with carbon dioxide, methane, nitric oxide and chlorofluorocarbons; the planet's temperature would continue to rise. The effects of this would be felt in still more severe climatic changes than those at present, producing more droughts and torrential rains that would affect agricultural production. In addition, the damage to the polar ice caps would raise sea levels, flood the coastal countries and obliterate many islands.

Today, the paradigm of the consumer society, "the California model" riding on the intensive use of such a polluting source of energy, has placed our civilization in one of the most serious dilemmas ever experienced in the pursuit of material progress: a low per capita consumption of fossil fuels leads to the economic non-viability of the nation, but a high consumption per capita by all nations would lead to the virtual non-viability of civilization.

As we begin the twenty-first century, the growing physical and social imbalance between food, energy, water and population is ignored in the national agendas of the underdeveloped countries. Indeed, the majority of these countries' governments, and their technocracies, evince an utter lack of concern at the problems. The myth of development, as a replica of the "California model" is so deeply rooted in the collective subconscious of the political classes that they do not realize that the technological revolution is making anachronistic the only two comparative advantages their countries possess, to wit, abundant unskilled labor and natural resources. Furthermore, the "California model" is impossible to finance and ecologically unsustainable.

Today, after more than fifty years of applying a variety of development theories and policies, the real per capita income in more than seventy so-called developing countries is lower than it was twenty years ago. Of a population bordering 5 billion in the underdeveloped world, around 3 billion survive on only two or three

dollars a day, and another 1.3 billion in extreme poverty can no longer even feed themselves, living on less than one dollar a day. This reality is an invitation to discard the myth of development, abandon the search for El Dorado and replace the elusive agenda of the wealth of nations with an agenda for the survival of nations. It is now crucial to stabilize the urban population growth, and to increase the supply of water, energy and food.

Therefore, it should be possible to develop a 'pact for survival' among all the political leaders in any poor country where alarming symptoms of water, food and energy insecurity are apparent.

To achieve this, the calorie consumption of the inhabitants of these countries will have to be increased from the barely 2,000 calories per capita at present to almost 3,000. The low fuel energy consumption, which is less than 500 kilos of petroleum per capita now, will have to be doubled; water consumption, under 2,000 cubic litres per capita today, should be at least quadrupled.

One fundamental prerequisite to bring about 'pacts for survival' in the poor countries is that they have genuinely democratic regimes. The 'pacts for survival' should be the outcome of broad national dialogues and of democratic consultations encompassing central and local governments, political parties, business circles, workers, academic communities and civil society in general. It must be admitted by all that non-democratic forms of government are regimes that will only confirm poor countries in their non-viability; this is because they do not permit the dialogue and the agreement that are indispensable if we are to find adequate answers to the difficult challenges ahead. Non-development is, precisely, a history of authoritarianism, corruption and exploitation that has not allowed the country to go beyond cheap labour and primary exports.

The 'pacts for survival' should not only be established through dialogue and democratic consultation, but they should continue to function permanently on that basis. Only through such a constant exercise will it be possible to adjust the 'pacts for survival' to the challenges that the market and the technological revolution will pose along the way for those countries currently infected with the technological backwardness, increasingly non-remunerative exports, and growing physical and social imbalances between urban explosion and lack of water, food and energy.

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