

CHALLENGES OF THE FUTURE

CHAPTER II

CHALLENGES OF THE FUTURE

Although the National Physical Master Plan of the Lebanese Territories (NPMPLT) takes imperatively into account and profits from the physical features of the country, its first concern resides in responding to the numerous challenges that Lebanon faces today and will face in the future.

These challenges include:

- Challenge of economic development
- Challenge of social cohesion
- Demographic challenge
- Challenge of housing
- Challenge of needs: transport, water, wastes, education, health
- Challenge of urban expansion
- Environmental challenge
- Challenge of war and peace in the region

II.1 THE CHALLENGE OF ECONOMIC DEVELOPMENT

The question of economic development has been the main concern of the authorities as well as the entire population since the end of the war. The ambition to see Lebanon's "natural role" re-established as a pivotal center and a regional pole collided with a series of internal as well as external obstacles, and has succeeded only in a few limited fields (luxury tourism, banking sector, etc.). In parallel, the main exportable services as well as industry and agriculture face a tough competition.

What perspectives await Lebanon for the coming years? How should the country be positioned on the regional and international stage? Should Lebanon count on specific production niches or should it diversify its activities? What are the perspectives of growth that one can imagine for the future?

II.1.1 New rules in international trade

The new century starts with a major challenge for all the countries of the world, particularly developing countries: new regulations due to the growing integration of international trade.

Lebanon, traditionally open to the outside world, has found itself unprepared for these new regulations that consist mainly of the elimination of customs barriers and expose every economic sector of the country to tough world scale competition.

Lebanon has signed, especially with Syria, other Arab countries and the European Union, many agreements that foresee custom barriers abolition. It is to become a member of the World Trade Organization (WTO). And yet the country is subject to important handicaps, in terms of productivity and competitiveness in many sectors (agriculture, industry and exportable services). Huge efforts are to be made as well in terms of transparency and free competition on local markets, and efficiency in the relations between Authorities and economic actors.

II.1.2 Quality assets valorization

In the presence of globalization, economists insist on the issue of “comparative assets” that distinguish a country from its partners and rivals and allow it to gain leading positions in certain markets.

Lebanon possesses a number of physical and human comparative advantages in the Middle East.

Its geographic location between the Mashrek, the Maghreb and Europe, its water resources, fertile lands, natural landscapes and heritage, and quality of life are permanent assets that characterize Lebanon for a series of reasons: climate conditions, hospitality, sea and mountain, etc.

Other important assets are liberal legislation in setting up companies and circulation of capital, relatively high level of education and qualifications, foreign language skills, etc.

The Lebanese Diaspora, excessively vast, plays an important role in international trade networks. The proximity of Lebanon to oil rich countries of the Gulf region gives an excellent opportunity to gain “Petrodollars” in turn for services and goods, and in the form of direct investments.

In addition to these assets, infrastructure have been recently completed in order to host firms, international fairs and exhibitions, luxury tourism, aerial and maritime transport, etc.

It is based on these assets that Lebanon could be distinguished from its direct rivals and build such an economy and social relations that will secure development and prosperity.

II.1.3 Promising niches and diversification

Economical studies¹ showed that the main comparative assets that Lebanon could exploit for international competition in short and medium terms are based on: tourism potential, agricultural potential (food products industry) and country's know-how in publishing, cultural industry as well as art craft (jewelry). These sectors are, in fact, those in which Lebanon has gained real experience and potential, and at the same time, those in which international and regional markets have not been saturated.

Therefore, it is important for Lebanon to bet strongly on these niches. Products of these fields are much better in the local markets than similar exported ones. They can even be exported themselves, and contribute hence to the external trade balance of Lebanon.

Tourism and food product sectors are both closely linked to the land: their primary asset is landscapes, topography, lands, water, sea, heritage, etc.

Publishing and cultural industries (cinema, television, etc.) are based on an intellectual and industrial knowledge (know-how). Jewelry lies on art craft skills as well as developed commercial and distribution networks.

However, should Lebanon renounce to other possible niches in services, industry and agriculture sectors for which it still lacks enough competitiveness?

Nothing insures that this lack of competitiveness will last on the medium and long terms. It is possible to think that with a sustainable investment, Lebanon could provide someday first class education and medical services in the Near East; develop once again high capacities of information and engineering services for export; and attract medium-technology industries (electromechanical, machinery tools, electronic components, manufactured products for building, etc.).

As for agriculture, with a structural re-organization of the sector (land consolidation, irrigation, preservation, subsidiaries, marketing networks, etc.) Lebanon can acquire an important status for a number of produces, especially high quality rare products, or endemic products.

It is essential never to forget that export oriented products constitute only one part of the economy, though the most strategic and not the most labor demanding one. The economy lies on an entire set of activities oriented towards hard importable or exportable products, such as services for persons, local transport, administration, local trade or construction sectors.

Hence, Lebanon's economic vision for the future will be based on three principles:

- Activities for which Lebanon possesses undeniable comparative assets: tourism, food products, printing and publishing, and art craft.

¹ Cf. Monitor – Ace for CDR, 2000.

- Activities for which Lebanon can become once again competitive, by making significant efforts: high-level services, international transports, medium technology industries, specific agricultural produces, etc.
- Activities far from any international competition: services for people and vehicles, local trade, local transport, etc.

The conservation of the diversity of activities is, however, essential for the sustainable re-establishment of the country's economy, starting with its external trade. To reach that goal, Lebanon has no other choice but to increase its production and improve its competitiveness, by reducing production cost and charges of enterprises and by investing in advanced technology, and vocational and educational training.

II.1.4 Regional economies facing international competition

With progressive abolition of custom boundaries, economic sectors which were far from international competition have found themselves in a difficult situation.

Historically, competitive sectors (enterprise services, industry) were always densely concentrated in Greater Beirut. While peripheral regions were out of competition, given that a number of agricultural products were protected by customs tax on imported similar goods.

With the agreements for progressive custom protection abolition, all the Lebanese regions, including distant ones, will have to face international competition.

For a given city or a region that gradually enters into the sphere of international competition, there can be three kinds of responses to face this competition:

- The first kind of response is to try integrating the region's economy into the economy of Beirut, the center. By improving means of transport, it can hope for the relocation of certain activities of the capital towards these regions.
- The second kind of response consists of looking at increasing productivity, benefiting from local costs, skills and advantages. This is a matter of modernizing classical activities already rooted in a village or a region.
- The third kind of response consists of identifying and developing products specific to the village or region, which could have an important and dominating share in the exported goods. Such products can be totally new or existing but marginal. Therefore, a city, even a village, can be a main producer of a specific product in the world (art craft, unique culinary product, etc.).

Regions and cities usually react differently, and choose to manage economic sectors by a mixture of the above-mentioned three responses. However, it is the task of the Management Plan to give all regions of Lebanon the opportunities to find the best

way to face the challenge of globalization by two major means: a good link with the center and preservation and valorization of specific potentials of each region.

II.1.5 Macro-economic perspectives

Just like all small countries with open economies, Lebanon is extremely sensitive to changes that can affect import and export product prices, the latter not being related to local supply and demand rule, but imposed from the outside.

The general trend for the coming years announces a decline in these prices, because of globalization perspectives and custom barriers abolition.

This evolution presents a major challenge for the Lebanese economy. The reduction of prices of imported products threatens local production, and at the same time increases their consumption.

Several productive sectors will face a progressive risk because of competition. As a consequence, the major risk would be for the Lebanese production to concentrate in non-competitive activities (not importable or exportable products and services: private services, real estate, etc.). Such an evolution would certainly reduce the per capita income that the Lebanese could have enjoyed from the national production.

In the presence of this challenge, it is crucial to make huge efforts for maintaining the Lebanese standard of living. The present situation, where income exceeds production values by 20% (National Accounting, 1997), can not last forever, because this surplus of income is essentially made up of loans.

A country's income should correspond in general to its production value. In the specific case of Lebanon, the adjustment of incomes and production can be done based on different methods:

- Either Lebanon's income decreases because there is not enough production and there is drain of capitals. Imports start decreasing, as well as the prices of local products; the balance is reached at the lowest level. It is the most spontaneous adjustment, but the less beneficial realignment. Resumption of emigration due to recession can be seen. The residents, a less demanding minority, share available income among themselves. This is a low level realignment, the cost of which is considerable losses in human resources.
- Or Lebanon succeeds in increasing its competitiveness in products of international concurrence (imported or exported goods) in a short period of time: This is the most difficult but the most advantageous scenario. The management of this transition phase presents major challenges in this regard.

The most beneficial perspective would be when a drop in prices of imported products is achieved progressively, while local production of the same goods concurrently

gains competitiveness. For this, it is important to work on internal costs (real estate power, administrative services, etc.) that are still considerably high in Lebanon compared to other countries of the region or even worldwide.

II.1.6 Evolution of GDP

Lebanon is a country of “medium high” income. According to official estimates, its GDP is around US\$ 17.3 billion (in 2002), that is US\$ 4,200 per capita. More than 80 states worldwide surpass Lebanon in terms of GDP per capita, and more than 80 others have lower incomes. Lebanon occupies the 8th position among Arab countries for this indicator.

It is difficult to predict Lebanon’s GDP growth for 2030, because the present situation shows major macro-economic disparities, due to high public debts, and because it is difficult to anticipate conditions of rebalancing.

Considering the two extreme hypotheses for adjustment of income and production previously mentioned, the following could be observed:

- In the less advantageous case, a GDP growth that could be nil or even negative in actual terms. The population would stagnate or barely increase (it could even diminish, for the first time, because of a birth rate reduction that had occurred once) and, in the end, the GDP could remain close to its actual level, that is around US\$ 17 to 20 billion in 2030. The standard of living of the Lebanese would be nearly the same as today.
- In the more advantageous case, a considerable GDP growth in actual terms is observed, even after a difficult phase of correction of actual public finance crisis. An annual average rate of 5 % is not excluded in view of the available human and capital resources. In the end, GDP level would reach roughly US\$ 65 billion in 2030. Population could increase enormously to 6 million people and life standard could be 2.4 times higher.

It is possible to narrow this range of extreme cases by considering closer scenarios for growth:

- On one hand, an annual average growth of 2 %; and
- On the other, a 2003-2007 evolution, based on the forecast adopted by the Government following Paris II conference in November 2002, followed by a 2008-2030 evolution marked with an annual growth of 3.5 %.

This leads to a GDP value varying between US\$ 30 billion (first scenario) and US\$ 50 billion (second scenario) in 2030.

The first scenario (2 %) corresponds to a situation where Lebanese production of exchangeable products (imported – exported) would not be significantly developed. With the resumption of emigration that would result, the resident population would

never exceed 4.5 million people in 2030. GDP per capita would reach then around US\$ 6 500 per year.

The second scenario (Government plan followed by a 3.5 % starting from 2008) corresponds to a situation where local production would be able to adequately resist to the competition induced by imported products. Resident population could reach 5.5 million people in 2030 and GDP per capita would be more than US\$ 9,000 per year.

Hence, based on the considered hypotheses, GDP per capita should increase most likely until 2030 from 60 % to 100 %.

This growth will allow future generations to benefit from a considerably better standard of living. Together with the foreign complementary income, this standard of living will be equal to what people enjoy today in countries such as Cyprus and Argentina. But still, Lebanon will remain far from developed countries, today and definitely in the future.

However, it is important to remember that an important and sustainable growth cannot be reached without a considerable increase in production and productivity. Competitive sectors must be developed more than others to achieve a balance in foreign trade; which could be translated into an evolution of the GDP composition where the relative shares of “other market services”, like industry and agriculture, increase significantly in comparison to the present situation.

Table 3: GDP composition in 1997

Agriculture and livestock	6.3 %
Industry	13.5 %
Water, Energy	1.5 %
Buildings and Public works	9.4 %
Transport	5.3 %
Trade	21.3 %
Housing services (Renting)	8.5 %
Other market services	22.6 %
Non-market services (Administrative)	11.6 %

Source: Ministry of Economy, in collaboration with INSEE. National Accounting, 1997, published in 2003.

II.1.7 Resources of the State and Municipalities

Will the expected GDP growth allow the State and the Municipalities to gain comfortable margin of flexibility in the future?

This is very uncertain. In the present period, being excessively over-indebted, the Government is trying to reduce its expenses everywhere possible. The day when

Lebanon succeeds in putting an end to its critical indebtedness, there would probably be a more severe control in order to consolidate the established balance and avoid another slip.

Thus, without getting into detailed accounting calculations, which could be meaningless given the extent of numbers and horizons of the Plan, it is obvious that public finance is progressively becoming a limited resource that must be spent rationally and on pre-evaluated objectives in all their dimensions.

These financial horizons can never be ignored. They restrict public service improvement and administrative efficiency.

Investment credits offered by the public sector are very limited, because, for a country with limited resources, priority is always for core operating expenditures. Therefore, it would be risky to expect and count on an investment capacity of the State and Municipalities exceeding US\$ 40 billion to 50 billion for the coming 30 years, all sources of public income included.

The considered privatization of various public sectors is likely to help rationalize expenses in the given sector (electricity, water, etc.) by investments complementary to those of the public sector. This can be the case of water, power, transport, telecommunications, etc... knowing that a major part of the education and health sectors is already privatized. Nevertheless, Public Authorities should not count on privatization to increase their financial margins. In fact, eventual deficits in operation of the services taken over by the private sector, due to the problem of collection of bills (water, electricity, etc.) or solidarity of the systems (medical, insurance, education grants etc.) should be taken in charge by the State, for a long period of time. Contractors usually secure in their contracts public guarantees against deficits for which they are not responsible.

Hence, if operational margins are to be secured for improving public services, the only possible solutions within the framework of relative scarceness of public finance reside in:

- Redeployment of expenditures (budgetary priorities);
- Minimization of unuseful expenditures (abolition or postponement); and
- Rationalization of the definition of priority projects in each field of action.

II.2 THE CHALLENGE OF SOCIAL COHESION

Lebanon faces a major social challenge due to the addition of many vulnerable factors of the Lebanese society.

The first of these factors is the persistence of the numerous psychological effects of the Lebanese war, some 14 years after the end of hostilities. These effects are portrayed in the restrictions imposed by many Lebanese in their movement and, mostly, when relocating their habitat. This is also revealed by the important weight, that the sectarian belonging occupies in the relationships with others as well as in political attitudes and positions.

The second factor is the poverty that touches a very important portion of the population, which is the result of difficulties in launching the economic activities of the country ever since the end of the war²; and of the high cost of living which characterizes Lebanon after-war, and finally of the uneven distributions of incomes.

The figures related to poverty vary as per the statistical sources, yet all of them do converge to demonstrate its amplitude.

The study of the Economic and Social Development Fund – ESDF conducted by the CDR in 2002 has analyzed the situation of households including children in school age, in relevance to 2 poverty lines: the relative poverty line, set at 782 US\$ per month and per household (4.8 average family size), and the absolute poverty line, set at 314 US\$ per month and per household (also 4.8 average family size). At lower levels than the relative poverty line, it would be impossible to satisfy the household's essential needs in terms of nutrition, habitat, transport, health care and education expenditures. The absolute poverty line is strictly related to the ability of securing food supply.

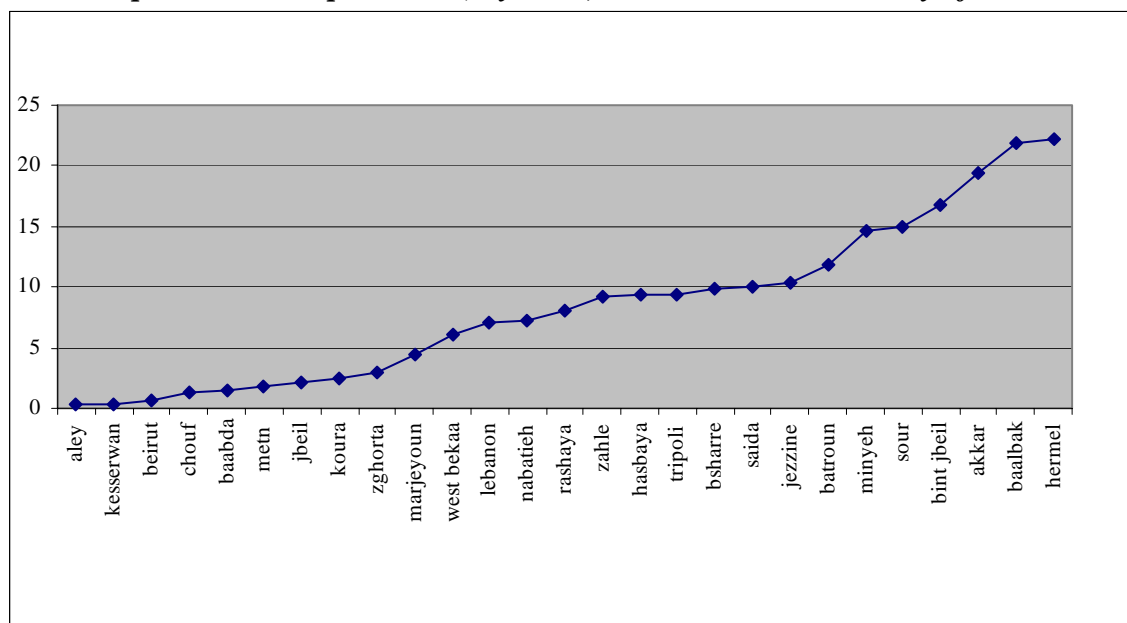
The above mentioned ESDF study showed that 42% of the households - including children at school age – live under the relative poverty line (782 US\$/month/household) and that 7% of households – and which include children – live under the absolute poverty line (314 US\$/month/household).

Another recent source, the study concerning working children and immigration (C. Kasparian, USJ, 2001), has concluded, on the basis of a sample comprising exclusively Lebanese households (with or without children at school age), that 59% of these households had a monthly income lower than to 800 US\$ per month, and that 35% of the households had a monthly income lower than to 500 US\$ per month. These results are most alarming³ in the sense that they reveal not only an even higher proportion of poor people than in the previous study, but also because the households of foreigners where poverty is theoretically more acute, particularly in the Palestinian camps, are excluded from the sample.

² The GDP per capita had still not recovered, in 2002 its 1974 level (in constant prices).

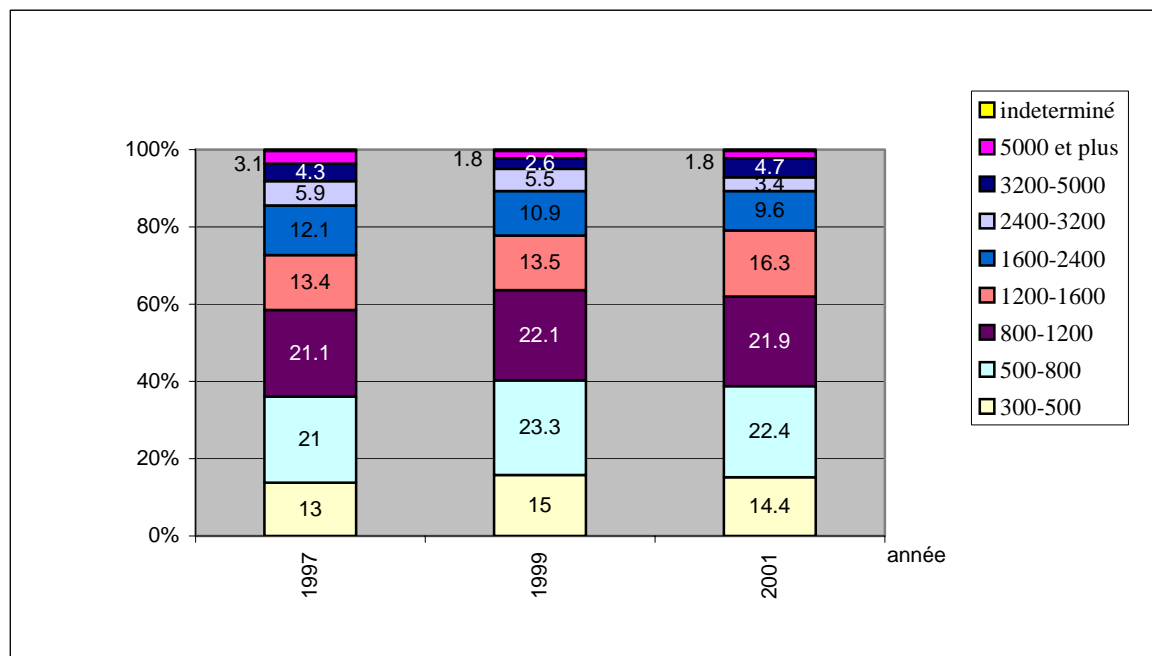
³ The differences of results between the 2 studies may be due to the fact that the USJ 2001 sample included households without children (individuals or couples) alongside households with children.

Figure II.1. : Percentage of households living below the absolute poverty level (314 USD per household per month) by Caza, based on the ESFF study of 2002



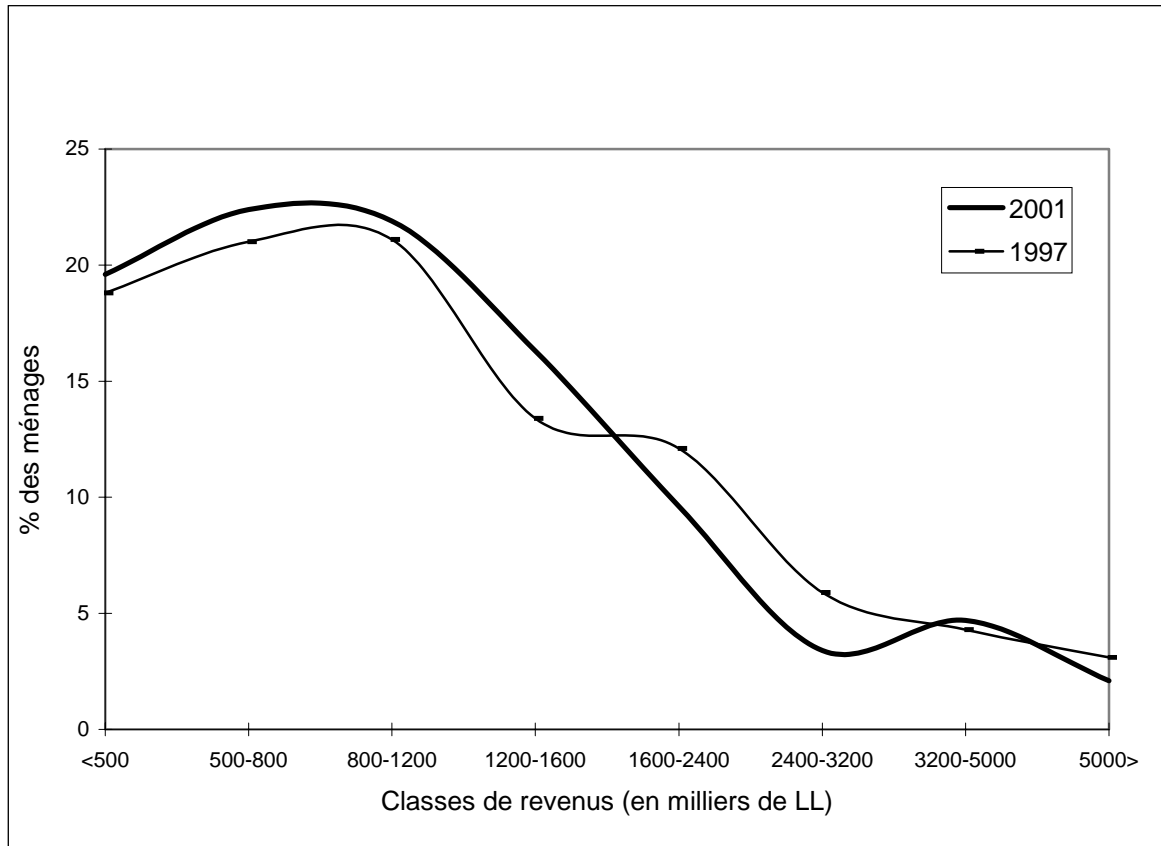
source : « Fond du Développement Economique et Social » 2002

Figure II.2. : Distribution of monthly income of Lebanese households in US \$ in 8 categories based on the USJ study of 2001



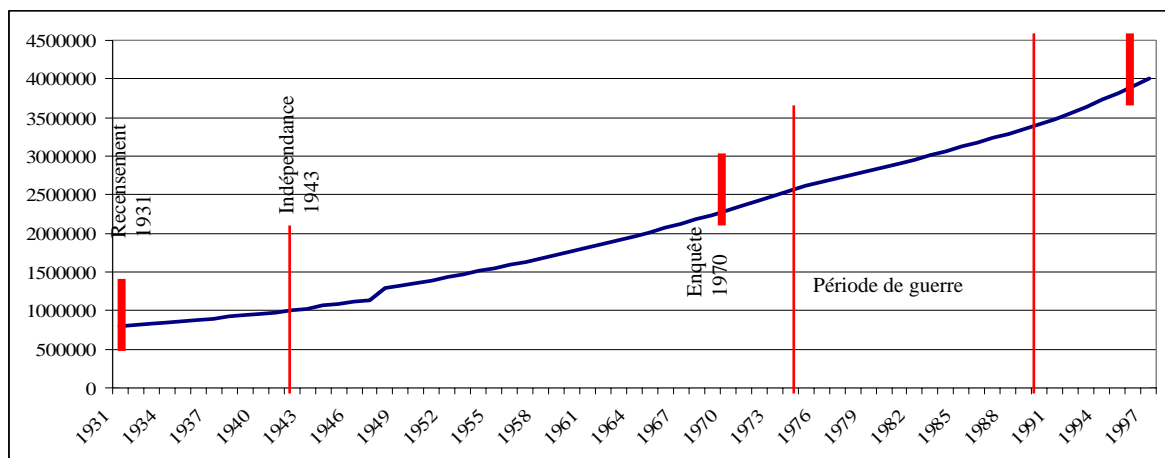
Source : « L'entrée des jeunes libanais dans la vie active et l'émigration », USJ 2001.

Figure II.3. : Distribution of Lebanese households in function of their income in 1997 and 2001



Sources : pour les revenus 2001, « L'entrée des jeunes libanais dans la vie active et l'émigration, USJ 2001 ». Pour les revenus 1997 : « Conditions de vie des ménages ACS, 1997 ».

Figure II.4 : Population growth in Lebanon between 1931 and 1997



Another fragile factor lies in the possible effects of solving the public finance crisis through taking out a part of the social security system, that allows the support through subsidies and waivers, from thousands of families across Lebanon. What would happen if the State should reduce the number of its public servants, or cut down the retirement pensions, or stop purchasing certain agricultural products above their market values, or collect all the water and electricity dues, before the economy takes off again?

The risk of social fragmentation is even more worrying, as it is rooted across the territory. Akkar and Baalbeck-Hermel are the most extremely poor regions of Lebanon. Tripoli's situation, north of Nahr Abou Ali, is most alarming. In many rural regions, namely in the South, many villages indicate a high level of poverty despite the fact that they often benefit from local and national systems of social security and subsidiary. Poverty is also present in the suburbs of Beirut; some areas are completely marginalized such as the southern seaside (Jnah, old seaside recreational institutions which have been taken over by squatters). The social situation in the Palestinian refugee camps, mostly in the South and in the North, poses serious concerns.

Confronted with these difficulties, the political class tried taking action by distributing equipments and launching infrastructure works in the regions, under the pretext of "balanced development". But these answers, even if they temporarily relieve the regions, contribute indirectly to further deepening the social gap between the regions. Additionally, the multiplication of general teaching schools, technical schools and branches of the Lebanese University limits the intermingling of the young generations of the different regions of Lebanon.

The "centrifugal" tendency that affects the Lebanese society has been illustrated in 2002 by claiming for the separation of the Caza of Akkar from the Mohafaza of the North, followed by a similar demand to separate both cazas of Baalbeck and Hermel from the Mohafaza of the Bekaa, and then, by a third one to separate the cazas of Jbayl and Kesrouane from the Mohafaza of Mount Lebanon.

Likewise, Lebanon seems to be the subject of sectarian and social fragmentation forces not only from social and community issues but also from the type of solutions given to economic and social development problems.

It is a major challenge for Lebanon to assert, more than ever, the constitutional principle of territorial unity and the freedom of its citizens to reside and move throughout all the Lebanese regions.

Lebanon should also review the methods of implementation of the "balanced development" concept so that the interventions would not have negative impacts on the goal of the unity of the country. In this perspective, "balanced development" should be further directed towards direct economic activities as well as services infrastructures. It should also favor the establishment of national public facilities to enhance integration between different regions, and increase intermingling between all Lebanese.

This is a long-term action, which relies on the convergence of many policies. The policy of land-use planning should also bring a strong contribution to answering this challenge, through a vision of integration and unification of the future of the territory with a redefinition of the priorities of the “balanced development”.

II.3 THE DEMOGRAPHIC CHALLENGE

Another challenge that Lebanon is facing is the continuous growth of its resident population which will certainly exceed 5 million people before 2030.

Historical background

At the establishment of “Greater Lebanon” in 1920, the country’s population was barely larger than 500 000 people. The first, and the only, comprehensive population Census that dates back to 1931 had given a total number of 793 000 people. At the end of World War II, Lebanon’s population had already exceeded one million inhabitants.

The country then experienced a considerable population growth, at the annual rate of 3.01 % for 30 years between 1945 and the outbreak of civil war in 1975. It reached two million people by mid-60’s, and in 1970 there was a total number of 2.3 million people (including the Palestinian camps).

This pace slowed down between 1970 and 1997 and the annual growth rate decreased to an average of 2.08 %, which is still considerably high in view of the war conditions for over half of this period. Resident population reached 4 million people in 1997⁴.

The evolution observed between 1970 and 1997 took place concurrently with important modifications in the mechanism of the demographic growth, where a significant reduction in fertility rate was noted. This rate is presently 2.3 children per woman (between the ages of 15 and 49), against 4.2 in 1986. There are large differences among the regions (less than 2 in Beirut, around 3 in the North).

Therefore, the natural growth of the population will take a slower rate than previously noted, particularly in Beirut and Mount-Lebanon. National projections show that the annual growth rate would be about 1% between 2000 and 2030, which is less than half the rate identified between 1900 - 1997.

Future growth of less than 1 % yearly?

The natural growth of the resident population in Lebanon would reach, all migration trends excluded, 5.6 million people in 2030 (middle scenario). But Lebanon will not reach this figure because of important emigration rates

Departures (immigrations) are closely linked with the economic and political situation of Lebanon as well as of the destination countries. They have been considerable during the years of war, slowed down since 1992, but remained however relatively high until 1997, and started once again to increase after 1998. These movements

⁴ Amongst the 4 million inhabitants officially residing in Lebanon (CAS) in 1997, Palestinian refugees censused by the UNRWA in the Camps accounted for at least 350 000 people. This number has reached 391 000 in June 2003, according to UNRWA. Half of these refugees live in the camps of the South and one third in the camps of Mount-Lebanon (Beirut suburbs).

include Lebanese emigrants as much as foreigners that return to their homeland, or Palestinians that leave Lebanon.

Newcomers are affected by the same economic and political factors. Such factors concern Lebanese citizens returning to Lebanon as well as foreigners immigrating to Lebanon for professional purposes.

Based on objective analysis of scarce available data on migrations in Lebanon⁵, two scenarios related to magnitude of departures were studied:

- The first one corresponds to a more balanced economic development and is characterized by fewer departures and arrivals than in the past, and where migration balance would be around –6,000 persons per year between 2001 and 2030 (that is around 170,500 persons for the whole period).
- The second one corresponds to a less balanced economic development, where departures and arrivals would be more in magnitude and migration balance would be around -27,000 persons yearly between 2001 and 2030 (roughly 789,180 persons for the whole period).

The effect of this negative balance of migrations with the outside would be to reduce the population size that would be induced from a natural growth until 2030. Instead of having a population of 5.6 million people in 2030, there would be 5.4 million people as per the first scenario and 4.8 million people as per the second one.

The Physical Master Plan adopts a medial scenario, between these two scenarios, with 5.2 million inhabitants in year 2030.

This scenario does not take into account Palestinian refugee displacements that could result from international agreements in the frame of any peace process in the Middle East. It is important to remember that this issue concerns around 0.4 million people currently living in camps (according to 2003 UNRWA census), half of them in the South (basically Saida and Tyre) and one third in the camps of Mount-Lebanon (Beirut suburbs) and 14 % in the North (northern suburb of Tripoli).

Geographic distribution of population

The 2030 population⁶ has been projected at Mohafaza level, taking into account the fertility rate of each Mohafaza and its probable evolution. The results have been grouped in 4 geographic areas: Beirut and Mount-Lebanon, North and Akkar, Beqaa and Baalbeck-Hermel, South and Nabatiyeh.

⁵ Especially, studies carried out by the University of St. Joseph in 2002 and 2003, and C. Kasparian, 2003.

⁶ Palestinians included.

Table 4: Projected population growth by groups of Mohafaza for 2030

	Population in 1997	Population in 2030	Growth %
Beirut and Mount Lebanon	1,910,896	2,310,000	21.22
North and Akkar	807,204	1,140,000	41.18
South and Nabatiyeh	747,477	1,040,000	37.93
Beqaa and Baalbeck-Hermel	539,448	740,000	38.90
LEBANON	4,005,025	5,230,000	30.79

Source: NPMPLT study, 2004

Table 5: Projected distribution of population by groups of Mohafaza for 2030

	Population in 2030		% in 2000
Beirut and Mount Lebanon	2,310,000	44.2 %	47.3 %
North and Akkar	1,140,000	21.8%	20.4%
South and Nabatiyeh	1,040,000	19.9 %	18.9%
Beqaa and Baalbeck-Hermel	740,000	14.1 %	13.4%
LEBANON	5,230,000	100.0%	100.0%

Source: NPMPLT study, 2004

Differences in fertility rates can change the relative shares of each Mohafaza. In general, each of the three Mohafazas (North, South and Beqaa) gained a point while Beirut and Mount-Lebanon lost 3 points.

Within each Mohafaza, scenarios are considered in relation to the % of population living in large agglomerations (more than 400,000) on one hand, and the % living outside these agglomerations on the other hand. At the national scale, the population in large agglomerations would increase from 64 % in 2000 to 65 % in 2030.

Table 6: Proportion of inhabitants in agglomerations in 2000 and 2030

Geographic entities	2000			2030		
	Total population	Population in large agglomerations		Total population	Population in agglomerations	
Beirut and Mount Lebanon	1,911,000	1,651,000	86%	2,310,000	1,990,000	86%
North and Akkar	807,000	385,000	48%	1,140,000	620,000	54%
South and Nabatiyeh	747,000	327,000	44%	1,040,000	490,000	48%
Beqaa and Baalbeck-Hermel	539,000	181,000	34%	740,000	300,000	40%
LEBANON	4,005,000	2,544,000	64%	5,230,000	3,400,000	65%

Source: NPMPLT study, 2004

II.4 THE CHALLENGE OF HOUSING SECTOR

The growth of house construction is mostly related to increase in the number of households, which increases faster than population size, due to the decrease in the cohabitation phenomenon: with a constant population, the number of households increases because the average size of a household tends to diminish.

The average household size in Lebanon was 5.3 persons in 1970. It dropped down to 4.8 persons in 1997. In comparison, this average is still 6.8 persons in Pakistan and 5 in the Philippines, but only 4.7 in Tunisia, 2.4 in France and 2.3 in Quebec. This reduction is due to a higher standard of living change in habits and traditions as well as ageing of the population.

The National Physical Master Plan adopted a reasonable scenario of a reduction of the average household size at the rate recorded in the past 30 years. Hence, it would drop from 4.76 persons per household in 1997 down to 4.34 in 2020 and 4.21 in 2030.

Table 7: Evolution of household size through 2030

	1997	2030	Evolution 1997 – 2030
Population	4,005,000	5,238,200	+ 31 %
Household size	4.8	4.2	- 13 %
Number of households	843,600	1,321,600	+ 57%

The number of households in 2030 will be slightly higher than the number of primary residences. Taking into account the cohabitation aspect, i.e. more than 1 family living in a house, the ratio considered is 1.024 households per primary residence. By using this ratio, there will be 1,291,000 primary residences in the year 2030. A considerable number of secondary residences and vacant houses are to be added.

Secondary residences used to represent 5.92 % of total no. of houses in 1996 (lower than the 1970 value of 10.6%), while vacant houses represented 17.20 % (significantly higher than the 1970 of 7.6 %).

For the future, the National Physical Master Plan considers that the increase of secondary residences, an important factor for the economy of villages, would reach about 11%, which is the one observed in 1970. It considers as well a relative decrease in the proportion of vacant houses (which was abnormally high during the 1990's due to the population displacements prior to 1990 and real estate boom after that) to reach that of the 1970's, which was 8 %.

The above adopted hypotheses lead to fixing the part of secondary residences and vacant houses to 19 % of the housing stock in 2030 (against 18.2 % in 1970 and 23.1% in 1997).

Table 8: Evolution of housing stock in Lebanon through 2030

	1996	2030	Evolution 1997 - 2030
Primary residences	792,000	1,291,000	+ 63 %
Secondary residences	63,000	142,000	+ 125 %
Vacant dwellings	183,000	127,000	- 30 %
Other	25,000	-	-
Total housing stock	1,063,000	1,560,000	+ 47 %

The growth in number of dwelling units of around 500,000 in 30 years remains lower than the number of units that will be built because construction includes, besides the reaction to demand, replacement of dilapidated and old houses. Every year, around 2000 units would be destroyed and replaced by new ones, which will raise total construction up to 560,000 units between 1997 – 2030 (roughly 16,000 to 17,000 units yearly).

A social challenge

However, the issue of dwellings could not be studied only from a quantitative point of view. Access to a dwelling in a country of medium and unevenly distributed income is critical, especially for young households.

Recent studies have shown a discrepancy between income level of the majority of youngsters below 30 years of age and costs for a dwelling. This situation induces certainly over-indebtedness, adopting illegal solutions or permanent cohabitation with parents, marriage postponement or even emigration.

There has to be solutions in order to support moderate apartment rentals, particularly in large agglomerations.

II.5 THE CHALLENGE OF NEEDS: TRANSPORT, WATER, WASTE, EDUCATION AND HEALTH

The demographic growth of 1.2 million people over 30 years would necessarily be translated into growing needs for the various urban services.

The evolution of the Lebanese society with time will be translated as well into modifications in behaviors and expectations, particularly mobility, number of daily trips, education of children and health care demands.

These evolutions had been estimated as follows:

Table 9: Adopted hypotheses for possible evolution of behavior and needs for 2030

	2000	2030	Growth
Population (middle scenario)	4,000,000	5,230,000	+ 31 %
Transport			
% of households having at least one car	65 %	75 %	+ 10 points
Total number of private cars	700,000	1,100,000	+ 57 %
Number of daily motorized trips / person	0.7	1.1	+ 57 %
Number of daily motorized trips/TOTAL	2,800,000	5,700,000	+ 100 %
Water			
Daily domestic water demand / person	200 liters	220 liters	+ 10 %
Total domestic water demand / year	296 Mm ³	418 Mm ³	+ 41 %
Wastes			
Weight of domestic wastes per person	336 kg	420 kg	+ 25 %
Weight of total domestic wastes in Lebanon	1.3 MT	2.2 MT	+ 63 %
Education			
Group of ages between 3 to 22 (school age)	1,510,000	1,590,000	+ 5.3 %
% of youngsters of school age	72 %	75 %	+ 3 points
Number of youngsters of school age	1,100,000	1,193,000	+ 7.5 %

Challenges of the transportation sector

In 30 years, the vehicle fleet will increase by almost 60 %, as will the average number of daily motorized trips per person in the same proportions. This will double the total number of motorized trips, taken into account the expected demographic growth. This evolution will provoke problems of infrastructure, densely located in the Central Urban Area (Greater Beirut and Mount-Lebanon), where the situation could become critical in many places if adequate managements or serious alternative public transport are not implemented. Similar problems will arise at the entrances and crossings of large cities. Road networks in rural regions, however, would continue responding to the needs, without having to increase their capacity.

Challenges of water demand

The increase in water demand for domestic consumption is related to demographic growth (30% in 30 years) as well as to the growth in daily personal usage of water (that could be estimated to be 10% in 30 years). The combination of these two factors would lead to a domestic demand of roughly 420 Mm³ (net volume, losses in the network excluded) in 2030, 41% more than in 2000. This perspective constitutes a major challenge to the country, because the total volume actually distributed by the Water Authorities is roughly 280 Mm³, only half of which reach consumers (because of losses) who developed their own means of water provision (wells and tankers). Hence, even if current losses in networks of 50% will be reduced to 20% in 2030, Water Authorities will have to distribute 520 Mm³ (11% of the annual water balance in Lebanon after evaporation) in order to satisfy the total domestic need. This presumes a simultaneous increase of 86% of distributed quantities by the Authorities and reduction of leakages from 50% to 20%. Without this double effort, private and uncontrolled groundwater extraction would reach dangerous levels and high risk of water shortage in many regions of the country, especially the large agglomerations.

Complementary resources should also be secured for irrigation. Currently, around 100,000 hectares (42% of cultivated areas, 33% of cultivable lands) are irrigated or receive complementary irrigation. Of these 30,000 hectares constitute small parcels of less than 1 dunum. Ongoing projects concern nearly 40,000 hectares of additional irrigated lands; which is equivalent to a growth of 40% of irrigated areas. The amount of water presently used for irrigation is 700 Mm³ yearly. Expected growth would increase this amount to more than 1 Mm³ yearly (around 25% of the annual water balance after evaporation). This constitutes a major challenge, though it would cover at this stage, only half of exploitable lands in Lebanon.

Challenges of the solid waste sector problem

The quantities of solid wastes to collect and treat constitute another major challenge. In 2001, each person used to generate 336 kg of waste per year. This quantity will certainly increase. It has already increased by 30% between 1994 and 2001 with an annual average rate of 4%. However, this growth is not indefinite, as demonstrated in the industrialized countries, where quantities of wastes generated per person have reached stable levels. In France, the weight is 420 kg of wastes per year per person. If this rate is considered for Lebanon, the generated quantity in 2030 will be 2.2 MT of domestic wastes per year, which will represent around 85-90% of total generated weight of waste. This constitutes a 63% increase, compared to the current situation. Will Lebanon, that did not yet adequately solve its solid waste management problem, manage to answer this future challenge?

Needs for education facilities

As far as education is concerned, the major element to consider will be the decrease in the number of school-age youngsters of the total population. The 3 to 17 years old group represents today 30% of the total population. In 2030, they will represent only 23%. Their absolute number will remain steady of around 1.2 million people. The

category of 17 to 22 years old will stabilize around 7.5% of population and their number will increase from 310,000 people in 2000 to 390,000 in 2030. This will be represented by an increase of 25% staggered along 30 years. The number of children and youngsters from 3 to 22 years old, which constitutes the majority of school and university age group, will increase from 1,510,000 to 1,590,000 between the years 2000 and 2030. Lebanon's scholar system "fosters" at present around 1,100,000 students, which is more than 72% of the concerned population group. This rate is already high, compared to other countries with similar or higher than Lebanon's social and economic situation. Even if this rate increases to 75% in 2030, additional accommodation capacities will be limited to roughly 90,000 places over 30 years, which is around 3000 places yearly, completely in the post-baccalaureate level.

Developments of the health care sector

In the health care sector, it is expected that the increase in demand would exceed the increase of the population, due to various factors, such as ageing, health and preventive care improvement, purchasing power, etc. On the other hand, health care supply should no more be envisaged in a classical approach, which is outdated in Europe and the USA, i.e, the number of beds for a given population. The future system is to provide health care without necessarily having to displace the patients. A large number would not have to leave their residences anymore and will be granted permanent assistance and care. Furthermore, the future will see technical plateaus being regrouped, for financial, security, as well as efficiency reasons. This assembling will have to be accompanied by remarkable improvements in the means of transport and transfer of patients.

At present, Lebanon is not facing problems of hospital bed capacity nor technical plateau supply. It is endowed with roughly 170 hospitals, having a total number of 10,000 beds, equivalent to one bed for 400 inhabitants, which is considered to be a very high rate. Besides, there are around 6 newly built public hospitals, designed to supply, altogether, 1,000 additional beds.

The challenge to face here lies more in the quality of health care, access of deprived people, control on expensive prescriptions (supported by public finance) and most generally, health care cost management. It is particularly essential to define as soon as possible, expected shares of private offers on one hand, and public offers on the other, and to clarify rules related to percentage of expenses covered by consumers themselves, by the health insurance system, private insurance as well as public finance.

II.6 THE CHALLENGE OF URBAN SPRAWL

II.6.1 Expected urban growth

The growth of housing stock, the development of facilities, and the appearance of new activities would induce a growth of urbanized areas, with the addition of 250-300 km² over a 30 year period to the existing 600 km² of urbanized areas (in 2000).

In fact, at the beginning of the 1960's, Lebanon had a population of only 2 million people and 260 km² of urbanized areas; that is 130 m² per inhabitant. In 1998, these numbers increased to 4 million people, 600 km² of urbanized areas and 150 m² per inhabitant. In 2030, adopting a ratio of 170 m² of urban area per inhabitant, there will be a total urbanized area of 884 km², for a population of 5.2 million people, which represents a growth of 284 km² within 30 years.

These statistics show that future urban growth should be between 250 and 300 km², that is an annual growth rate similar, in absolute value, to that of the 1963-1998 period (the only available information to date: + 10 km² per year).

This expansion poses a major challenge for Lebanon, because its potential impact, depending on how it is managed, could be important on the quality of life, water resources availability, costs of infrastructures, and the future of natural, agricultural and landscape areas.

Urban sprawl will be located according to the following two factors:

- Evolution of demand for housing, enterprise and facilities: it is characterized by an important inertia, in the sense that the existing urban structure remains determined – at national, regional and local scales – by the urban pressure. Therefore, growth of large development areas in the different regions and agglomerations will be only marginal (see previous tables of the “Demographic Challenge”).
- Action of the Authorities: legislation, localized decisions, and provision of infrastructures and facilities have an important effect on the form of urbanization, in terms of concentration or scattering, more or less high densities, more or less harmonious aspects, avoiding or not a number of sensitive areas (natural, agricultural, flood prone area, etc.).

It is the second factor that weighs the most in the potential impact that urban expansion might generate on resources, costs, quality of services and quality of life.

II.6.2 Distribution of lands for urbanization

Distribution of lands intended for urbanization has been analyzed for the coming 30 years, taking into account a progressive densification of areas nearest to cities (in terms of construction as well as demographic development) and an un-densification of current highly dense urban zones (in terms of demography).

Distribution of some additional 250 to 300 km² of urbanized surfaces has been carried out in steps:

- Geographical distribution of resident population in 2030 (or housing stock, which is almost the same) has been carried out on the basis of Mohafazas, and then distributed within each Mohafaza (see “Demographic Challenge”).
- The tendency of the existing urban structure to increase or decrease its density (by number of dwellings per urbanized residential hectare) has been evaluated. It was possible to identify for each agglomeration a maximum accommodation population capacity in existing urban structure by 2030, and the needs for expansion (expressed in number of dwellings).
- Available areas (except highly steep slopes) have been surveyed in the perimeter and around each important agglomeration. The capacity of accommodating population has been evaluated using densities, in logical continuity of existing conditions.
- Urban expansions have therefore been roughly planned around existing agglomerations, by avoiding agricultural terrains, major natural areas, steep slopes, and hazardous zones.
- This first exercise has been adjusted, afterwards, taking into consideration the spatial choices of the National Physical Master Plan, particularly the will to alleviate the urban pressure exerted on coastal areas, in favor of a more controlled development of interior large agglomerations such as Zahle-Chtaura and Nabatiyeh.

The result of total urban sprawl distribution (300 km² or 30 000 hectares) is presented as follows:

- Central Urban Area (Greater Beirut and surrounding agglomerations) would have roughly an additional area of 5 500 hectares.

- The agglomeration of Tripoli would need an additional area of around 1,800 hectares, if it is intended to decrease the particularly high densities of the center and the suburbs⁷.
- Other large agglomerations in the country (Baalbeck, Zahle-Chtaura, Nabatiyeh, Saida, Tyre, Jbayl) would need an additional area between 6 000 to 1000 hectares each, in order to satisfy their urban expansion⁸.
- The rest of the cities and villages of Lebanon (more than 1,000) would need all together around 12,000 to 15,000 hectares that is an average of 1.2 to 1.5 hectares per locality (average varying according to size and geographic location of the locality).

Precisions of methodology

The numbers of urbanized areas in 2030 that result from this forecast should be explicitly interpreted.

Hence, while foreseeing a growth in the urbanized areas of the Central Urban Area from 170 km² up to 225 km² (a growth of 55 km² in some 30 years), it should not be concluded that the urban planning should provide an area of 55 km² to accommodate residents and additional activities from now and until 2030.

In fact, it is in general necessary to prepare the local urban planning documents for larger constructible areas than expected. The reason behind this difference is due to the fact that property market cannot be controlled by a plan. Even if the land is classified for high rise buildings, it could remain unused, or built with less than % maximum capacity.

This methodological comment should be taken into account while elaborating local urban planning documents, or reviewing old ones, in which the most important issue is to locate areas of urban expansion and offer rights to build, exceeding forecasted volume of expected demand (which itself, is not an approximation).

⁷ Expansion of the agglomeration of Tripoli would be obviously less important should a settlement of the Palestinian cause occur, including return of refugees and closing of the camps.

⁸ For Saïda and Tyre, urban sprawl would be significantly less important should a settlement of the Palestinian cause occur, including return of refugees and closing of Ain-Heloueh, Bas, Rashidiyeh and other camps.

Table 10: Urban and demographic growth in Central Urban Area

	Urbanized surfaces in 2000 (km ²)	Resident population 2000	Urbanized surfaces in 2030 (km ²)	Resident population 2030
Beirut	20	400,000	20	400,000
First ring	70	900,000	80	1,000,000
Second ring	80	300,000	125	530,000
TOTAL	170	1,600,000	225	1,930,000

Note: The 2000 population of the first ring includes Palestinian refugees. The projections of growth would be less in this zone, in case the Palestinian cause is settled and the camps are to be closed.

Table 11: Urban and demographic growth in the agglomeration of Tripoli

	Urbanized surfaces in 2000 (km ²)	Resident population 2000	Urbanized surfaces in 2030 (km ²)	Resident population 2030
Tripoli	8.0	220,000	14.0	320,000
Suburbs	15.0	102,000	27.0	210,000
TOTAL	23.0	322,000	41.0	530,000

Note: The 2000 population in suburbs includes Palestinian refugees. The projections of growth would be less in this zone, in case of the Palestinian cause is settled leading to closing of camps.

Table 12: Urban and demographic growth in the agglomeration of Saïda

	Urbanized surfaces in 2000 (km ²)	Resident population 2000	Urbanized surfaces in 2030 (km ²)	Resident population 2030
Saïda	3.3	88,000	4.0	80,000
Suburbs	12.1	86,000	21.0	186,000
TOTAL	15.4	166,000	25.0	266,000

Note: as Table 11.

Table 13: Urban and demographic growth in the agglomeration of Jbayl

	Urbanized surfaces in 2000 (km ²)	Resident population 2000	Urbanized surfaces in 2030 (km ²)	Resident population 2030
Jbayl	2.0	14,000	2.5	16,000
Suburbs	11.6	37,000	14.0	49,000
TOTAL	13.6	51,000	16.5	65,000

Table 14: Urban and demographic growth in the agglomeration of Zahle

	Urbanized surfaces in 2000 (km ²)	Resident population 2000	Urbanized surfaces in 2030 (km ²)	Resident population 2030
Zahle	4.1	52,000	4.5	55,000
Suburbs	7.8	65,000	15.5	138,000
TOTAL	11.9	117,000	20.0	193,000

Table 15: Urban and demographic growth in the agglomeration of Nabatiyeh

	Urbanized surfaces in 2000 (km ²)	Resident population 2000	Urbanized surfaces in 2030 (km ²)	Resident population 2030
Nabatiyeh	3.5	22,000	5.5	40,000
Suburbs	11.5	30,000	15.5	44,000
TOTAL	15.0	52,000	21.0	84,000

Note: idem Table 11.

Table 16: Urban and demographic growth in the agglomeration of Baalbeck

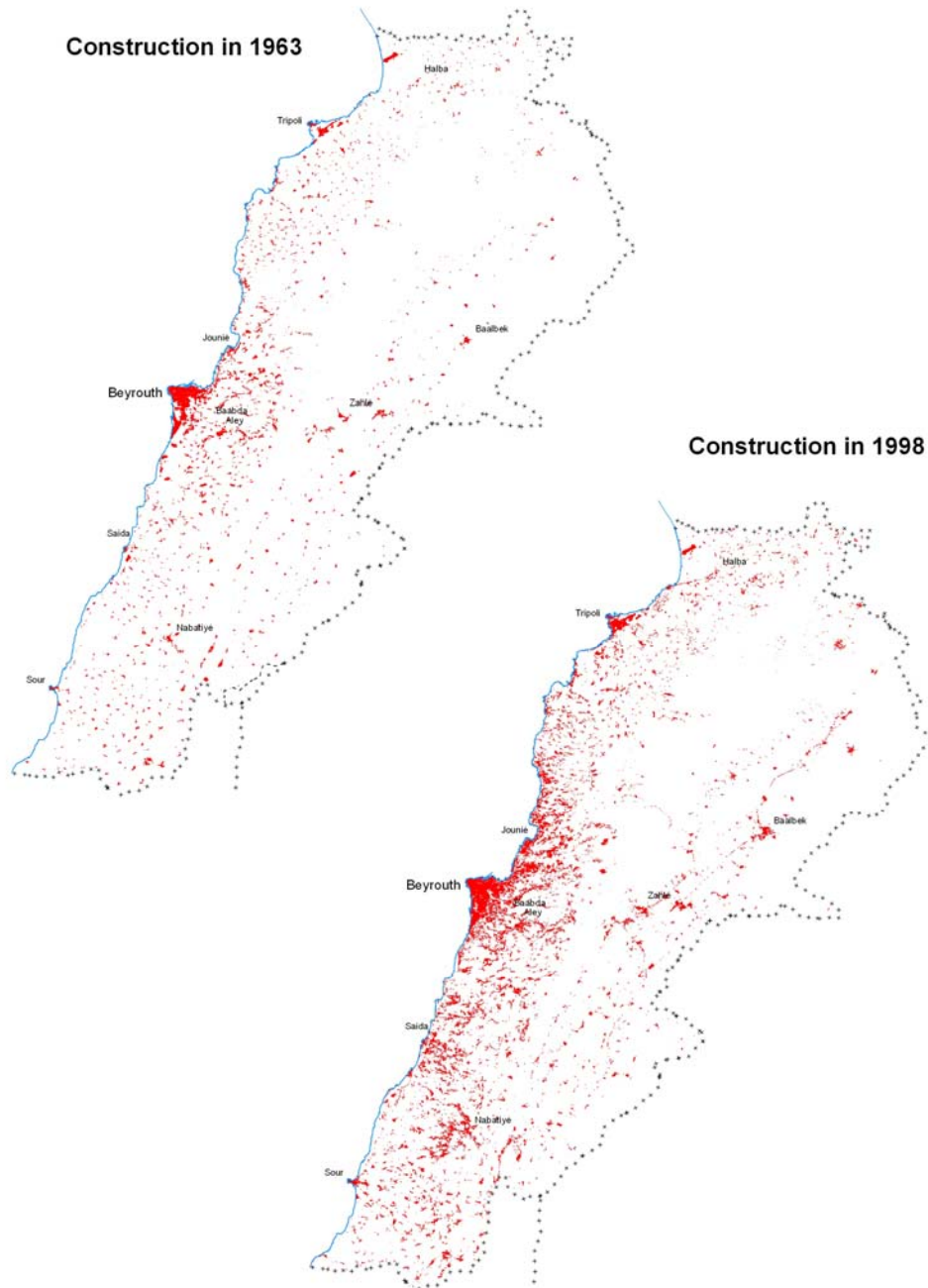
	Urbanized surfaces in 2000 (km ²)	Resident population 2000	Urbanized surfaces in 2030 (km ²)	Resident population 2030
Baalbeck	5.5	50,000	7.0	70,000
Suburbs	3.9	30,000	8.4	35,000
TOTAL	9.4	64,000	15.4	105,000

Table 17: Urban and demographic growth in the agglomeration of Tyre

	Urbanized surfaces in 2000 (km ²)	Resident population 2000	Urbanized surfaces in 2030 (km ²)	Resident population 2030
Tyre	3.1	48,000	3.4	52,000
Suburbs	6.7	69,000	12.9	122,000
TOTAL	9.8	117,000	16.3	174,000

Note: as Table 11.

Figure II.5 Urban pressure



II.7 ENVIRONMENTAL CHALLENGE

For the coming decades, Lebanon will be facing more environmental degradation challenges.

Demographic growth, urban expansion and life standard improvement (which would lead to higher possibilities for construction, vehicle facilities, etc.) will in fact increase the pressure on natural resources.

II.7.1 Water quality

Groundwater quality is already in an alarming situation, due to the infiltration of pollutants (wastewater, industrial wastes, solid wastes leachates, etc.) and the increase of uncontrolled drilling of wells (more than 45 000 private wells, according to the 1996 CAS Census). This pollution has direct effects on public health and health-related expenditures.

Demographic and urban growth foreseen for the coming 30 years can lead the water resources sector to a catastrophic situation if the number of wells, instead of decreasing, continues on increasing, or if water treatment projects lag behind, especially in zones of vulnerable resources (prone to high infiltration into the ground).

Thus, ending the degradation of water resources constitutes one of the most important challenges that Lebanon will have to face in the coming decades.

II.7.2 Wastes

Solid waste generation is expected to grow by more than 60% by 2030. This represents a significant challenge for the national and municipal authorities.

To date, only collection of domestic waste had been managed reasonably well. Dumping sites were badly managed and those of large cities ended up looking as mountains of non compact wastes at the seashore in most cases (Saida, Bourj Hammoud,..). These sites reached their saturation capacity in few years and occasionally caused accidental pollution problems. Solid wastes in rural areas are still disposed off in dumps, mostly on the banks of valleys causing high risk to water pollution, and thus health and tourism activities.

Sanitary landfill sites should be managed in a totally different way, based on solutions that commensurate with the size of the challenge. In the short-term, it is necessary to locate sites capable of absorbing 1.5 million tons per year, equivalent to nearly 1 million cubic meters of compacted wastes, more than half of which are generated by Mount Lebanon and Beirut. If sanitary landfill sites are designed for 20-m height, half of which are below ground, an annual area of more than 10 to 15 hectares would be required at the national scale. If waste were not properly compacted, the land required would be more than 40 hectares per year.

In the Central Urban Area, the challenge consists of where to find 6 to more than 20 hectares of land per year that would be far from residential areas?

In other regions, landfills will require less area, but those serving large agglomerations will necessarily be of larger size.

Surely, it is possible to envisage a reduction in the quantities of waste by previous composting or waste-to-energy treatment. These solutions, however, are very slow to implement, because they require significant funding. Even in the case of an ideal treatment of all wastes, the “ultimate waste” volume would not be reduced by more than 30% to 40%.

II.7.3 Quarries

Quarries and the pressure they exert on natural areas as well as on the quality of life constitute another major challenge to the environment.

Lebanon did not succeed in adequately managing this issue. Many quarries (the majority of them) are unlicensed, and most of them, even the authorized ones, have not respected legal dispositions in terms of material extraction and site rehabilitation.

Hence, the attitude of the authorities has been divided between the recognition of economic and social importance of quarries, the need to put an end to illegal activities or on the contrary tolerating them, or total and firm prohibition on the entire territory. The authorities did not take a definitive decision whether extraction sites should be concentrated in few zones, or on the contrary, distributed on small and medium-sized quarries all over the country.

Hundreds of relatively old quarries in Lebanon have caused a serious visual intrusion to the often spectacular natural landscapes of more than 3,000 hectares of lands. Every year, the needs of the country for raw material would require the use of tens of additional hectares.

Demands for raw material-roughly 3 million m³ per year

The challenge of quarries is to be examined, differentiating between 4 major categories of materials: gravel, sand, calcareous cement and stone. The significant pressure on the landscape and the environment concerns essentially sand and gravel, which represent more than 80% of the demands.

An average of 200 to 300 tons of aggregates (sand and gravel) is required to build an apartment. Over the period 2000 to 2030, an annual average between 2 metric tons (lower scenario) and 4 metric tons (higher scenario) of aggregates is required for apartment construction only.

The needs related to other types of construction (offices, industrial, and commercial facilities) are estimated at 0.5 Mt per year over the same period.

Finally, the aggregates needed for road construction are estimated at an average of 5,000 tons of aggregates per 1 km of road (double carriage way) construction and 20,000 tons per km of new highway. Ordinary road maintenance consumes around 10% of these values, while rehabilitation can even consume 40%. Hence, if Lebanon's entire road network is to be maintained or rehabilitated only once during the 25 coming years, and should the network be extended in reasonable proportions, an annual volume of roughly 2 Mt of aggregates is required.

Overall, Lebanon's current demands for aggregates can be estimated as follows: 2 to 4 Mt per year for houses, 0.5 Mt per year for other types of construction and 2 Mt per year for roads. This makes a total quantity in the range of 4.5 and 6.5 Mt per year, or 2 to 2.5 Mm³.

With other extracted materials (calcareous cement, rocks, clay, etc.), the volume to extract – for the Lebanese BTU current needs – could represent up to 3 million m³ per year (including aggregates).

If the entire volume is to be provided from local production, the impact of quarries in terms of site disturbances would be significant. In fact, we shall account for the percentage of waste contained in the extracted material and for the land used for storage, circulation, set back, etc.. As such, for obtaining 3 Mm³ of usable material, some 4 Mm³ should be extracted and the areas required would be 60 to 80 hectare per year.

Taking into consideration the rough topography of Lebanon and the high rate of urbanization, a rigorous management policy is required to control the quarrying activities.

Land reclamation, the great consumer of materials

The problem of quarries has emerged in Lebanon with large-scale reconstruction projects during the 1990's. With limited authority control, demand for materials has been significant, ranging between 10 Mm³ and 15 Mm³ per year during the period 1994-2000. A considerable part of extracted material (roughly one third) has been used for land reclamation in Greater Beirut (Dbayeh, Beirut Central District, Beirut International Airport runway). This part represents more than 30 Mm³, which is equivalent to 8 to 10 years of ordinary Lebanese BTP consumption.

Land reclamation projects in Lebanon are frequent and many of them are under study in Tripoli, Jounieh, Jdaydeh, Saida, etc. Additionally dikes, and marinas are constructed all along the coastline.

Hence, the effect of land reclamation on the proliferation of quarries must be systematically evaluated on both the economic and environmental levels. Scars in the landscapes caused by the quarries left doubt and reservations about the interest, for example, of the Dbayeh land reclamation for offering only 5,000 dwellings, the construction of which would have required 4 to 5 hectares of quarries only.

II.7.4 Marine pollution

Seawater quality is very critical. Untreated domestic and industrial wastewater outfalls and intentional or accidental disposal of thousands of tons of solid wastes into the sea induce a catastrophic situation along the seashore, which threatens the seaside tourism, the fishing sector and the coastal ecosystems. Demographic and urban expansion will surely worsen the situation if no protection measures are undertaken.

The challenge is great; it will be necessary, first to stop degradations in order to change the trend and expect an improvement of the coastline situation.

II.7.5 Natural areas

Natural terrestrial areas have been the subject of major deteriorations, essentially due to the break of the natural continuity induced by urban encroachment, quarries, as well as waste disposal in valleys. In the future, the risk would be to see additional urban encroachment on new and valuable natural areas, endangering Lebanon's most important assets, its attractiveness and quality of life.

Public action however, could provide efficient responses to this challenge. A part of these measures consist of expensive investments in the treatment infrastructure for domestic water as well as wastewater. It is difficult to provide satisfactory infrastructure in a short period of time due to lack of available financial resources. But there is an important part of the responses that have no financial value. They consist of regulatory aspects, especially those that can orient urban settlements towards areas of low environmental risks.

II.8 THE CHALLENGE OF WAR AND PEACE

The last but not least major challenge that Lebanon faces is the Middle East conflict.

This conflict and all its ramifications weigh quite heavily on the opportunities for economic and social development in all the countries of the region, among which is Lebanon.

The economic and social ambitions that Lebanon strives for may be stalled by this conflict and its cyclic crisis.

On the contrary, the establishment of a just and sustainable peace in the region could substitute the security threats and limitations of movement of men and goods by serious economic threats.

Against this conflict and the uncertainties linked to the resolution of the conflict, Lebanon must strengthen its acquired positions and prepare itself for possible changes.

National and Local Stakes

The stakes of war and peace encroach on national economic perspectives as well as South Lebanon's development opportunities.

At the national level, the constant state of conflict in the Near East restrains, on more than one issue, opportunities for development. The establishment of peace would greatly strengthen the investors' confidence in the entire region, including Lebanon, encouraging establishment of enterprises, international tourism and trade exchanges. On the other hand, Lebanon and most of the Arab countries of the region might face the competition of a very developed foreign economy, which offers highly efficient port, airport, engineering and tourism services. Because of this competition, Lebanon will need to depend on improving the quality of its services sector as well as on the communication advantages it enjoys with other countries and Arab economic agents.

Regarding South-Lebanon, the constant state of conflict has deprived this region from the traditional exchanges it has enjoyed prior to 1948, with the North of Palestine, and has made out of Beirut and the sea the only gate to new markets. The establishment of a sustainable peace would reinstate the strategic importance of this region mainly through opening the road towards Qoneitra, Safad and Haifa. The economic situation of South Lebanon would then be radically changed.