

Action for sustainability: challenges facing Syrian plan for sustainable urban development

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Sustainable development and by extension sustainable urban development, are evolving concepts that depend upon the development of regional and local approaches and solutions. There is a differentiation between the definitions, approaches and priorities in developed and developing countries. Most definitions of sustainability are unhelpful because of their wordiness, lack of detail or ambiguity. Also, in Syria, a chaotic urban context has existed over the past 50 years; the urban government handles urban as piecemeal solutions. The lack of a long term solution for urban growth and urban policies integration has always been the case in the Syrian urban planning process. Subsequently, creating a national agenda for sustainable urban development in country like Syria is required to bridge the gap between developed and developing countries.

This paper focuses on providing the critical requirements for achieving sustainable urban development, by analysing the opportunities and constraints in the case of Syria. The key requirement is the establishment of a solid knowledge foundation for Syria that will equip the public, urban development stakeholders, architects and planners with accurate and relevant knowledge generated within the framework of the social and economic needs, its cultures and its biophysical environment to guide their decisions and actions towards establishing a sustainable urban environment. Finally, the paper raises questions for future research into the need for new national framework and legislation considering sustainability dissensions, and highlights clearly the practical benefits of treating the urban environment and its components as a whole.

Keywords: Syria, challenges, sustainable urban development, urban growth, sustainable development

1 Introduction

Syria lies on the eastern costal of Mediterranean Sea. It has a total area of 185,180 kilometres of which 14 per cent is occupied by urban areas. Each region is called a Mohafaza (Governorate) (Al-Cheikh Mahmoud, 1993, p. 287). Syria is divided into four regions: Southern, North-Eastern, Middle and Coastal regions; and further into urban and rural areas. Each Governorate (Mohafaza) encompasses many zones, each of which is called Mantiqie (zone). Since the middle of the last century, Syria has experienced rapid population growth, average increase of 3% per annum, the population which in 1971 was 6.3 million has greatly increased to an estimated 18 million in 2002 (Central Bureau of Statistics, 1995; Al-Cheikh Mahmoud, 1993, p. 287). The percent of the population between 0 –14 was calculated at 40.5%. The annual population growth rate was estimated at 2.7%. Total Life expectancy for men and women was 69.6 years and 71.6 years, respectively (Johannesburg Summit, 2002, p. 7).

The distribution of population growth appears to be largely due to regional preferences, the relative shortages of housing in all major urban centres and the development of employment opportunities. It is essential to state that, while the proportion of the total population in the major cities has continued to rise, yet their relative share of the total urban population of the country as a whole has slowly fallen. This is explained by the relatively faster development of smaller urban centres (Mohmoud, 1993). The significant socio-economic changes that took place in Syria society accelerated population migration from rural to urban areas, of which major cities like Damascus, Aleppo and Homs always received the largest portion. With the fast growth of the city population, land and housing in major cities Damascus, Aleppo and Homs came under increasing pressure. In addition, industrial development that generated economic growth and provided much needed employment, but also contributed to air, land and water pollution with resulting ill health. The result of industrial expansion in Syria is not only waste gases from factories and industrial activities but also emissions whose impacts are little understood (Clarley and Christie, 2000, p. 15).

This paper focuses on providing a critical analysis of the potential for achieving sustainable urban development in the case of Syria which is experiencing rapid urban growth, by analysing the challenges and constraints facing social and economic needs, its cultures and its biophysical environment. The categorisation and analysis of the selected issues is based on written materials evaluated by the

authors. This paper argues that urban government planners in Syria have ignored sustainable urban development opportunities for improving the quality of both nature and built environments, instead the implementation of sustainability has been regarded from a very acute perspective focused on mainly economic considerations. It is concluded that, radical changes must be initiated to address a rapid urban growth situation in Syria, and that new strategies and comprehensive frameworks are required to address these problems holistically.

2 Sustainable Urban Development

More than seventy definitions of sustainable development have been identified and interpreted by different organizations, groups and stakeholders to suit their own goals (Macklely, 2001). Such definitions however, have in common the same concerns of:

- Living within the limits of earth resources.
- Understanding the inter-relationship between economy, society and environment
- Equitable distribution of resources and opportunity.

These propositions demonstrate that there is growing concern about the long term future, taking into account the exploitation of the resources of the planet, the impact on the environment and the continuing high levels of poverty, to which are linked social unrest, population growth and environmental degradation.

The most popular definition of sustainability is the one presented in the Brundtland Commission on Environment and Development “Sustainable Development is development that meets the needs of present generations without compromising the ability of the future generation to meet their needs and aspirations” (Bentivegna, et al, 2002, p. 85). The key features of the concept are (Meadowcraft, 2000):

- It focuses on promotion of development, or progress;
- It places a priority on the ‘needs’ of the poor and those of future generations;
- It refers to environmental limits to human activity;
- It defines sustainable development as a process of improvement rather than any particular activity.

Sustainable development is classically portrayed as the interface between environmental, economic and social sustainability” (Bell and Morse, 2003, p. 3). It cannot achieve a sustainable system by providing answers for each system

independently. However, achieving a balanced design in terms of sustainability is not always easy because there are numerous interactions and many of them may be in conflict with needs which have to be satisfied simultaneously (Clements-Croome, 2004, p. 373). Consequently, the attempt to separate the ecological application from the economic dimensions results in the wrong conclusion.

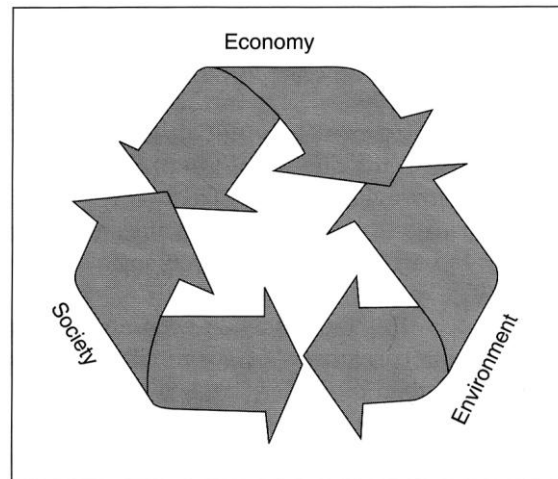


Figure 1. The decision making cycle for sustainable development. Source: Du Plessis, 2004, p. 381.

The concept of sustainability at global scale contains some common consensus on the following issues (Ibrahim, 2007, p. 43):

- Sustainable Development does not only refer to environmental protection but also embraces the economic and social aspects (WCED, 1987, p. 46). SD must encompass the three inter related aspects of the environmental, social and economic aspects.
- Sustainability related to a dynamic, balanced, and adoptive evolutionary process, i.e. a process in which a balanced use and management of the natural environmental basis of economic development is ensured (Camagni et. al, 1998, p104).

The idea of sustainable urban development has been seminal and highly significant among intellectuals and policy makers in the 1990s (Pugh, 2000, p.1). While there has been no consensus in what constitutes comprehensive framework about sustainable urban development, the fundamental ideas around which sustainable urban development can be formulated in the years to come are (Du Plessis, 2005, p. 406):

- Meeting basic human needs within environmental limits;
- Through limiting impact and consumption;
- In a cooperative world of networked settlement;
- In partnership with nature;
- In solidarity with future generations.

While there are certain universals in the five outlined aspects of sustainable urban development, there is considerable divergence in opinion regarding which approaches, priorities and drivers should take precedence (Du Plessis, 2005, p. 406). The application of the five outlined principles of sustainable urban development is determined by local conditions, including local cultural constructs, community behaviour and preferences, especially value systems.

3 Challenges facing urbanisation in Syria

The distribution and morphology of cities, the dynamics of urban growth, the linkages between urban and rural areas and the living conditions of the rural and urban population also vary quite substantially over time (United Nations, 2008, p. 364). In general, urbanization represents a positive development, but it also poses challenges and limitations. The scale of such challenges is particularly significant in less developed regions, where most of the urban growth takes place in the main cities. Urbanization has significant social, environmental, and economic implications: Many important economic, social and demographic transformations have taken place in Syrian cities. The urban expansion, due in part to migration from rural to urban areas, varies significantly across regions and cities. Figure 2 shows major socio- economic trends and their consequences in Syrian urban growth. The following section describes the key challenges facing the urbanisation in Syria.

Major Socio-economic trends

Major consequences

And pressures

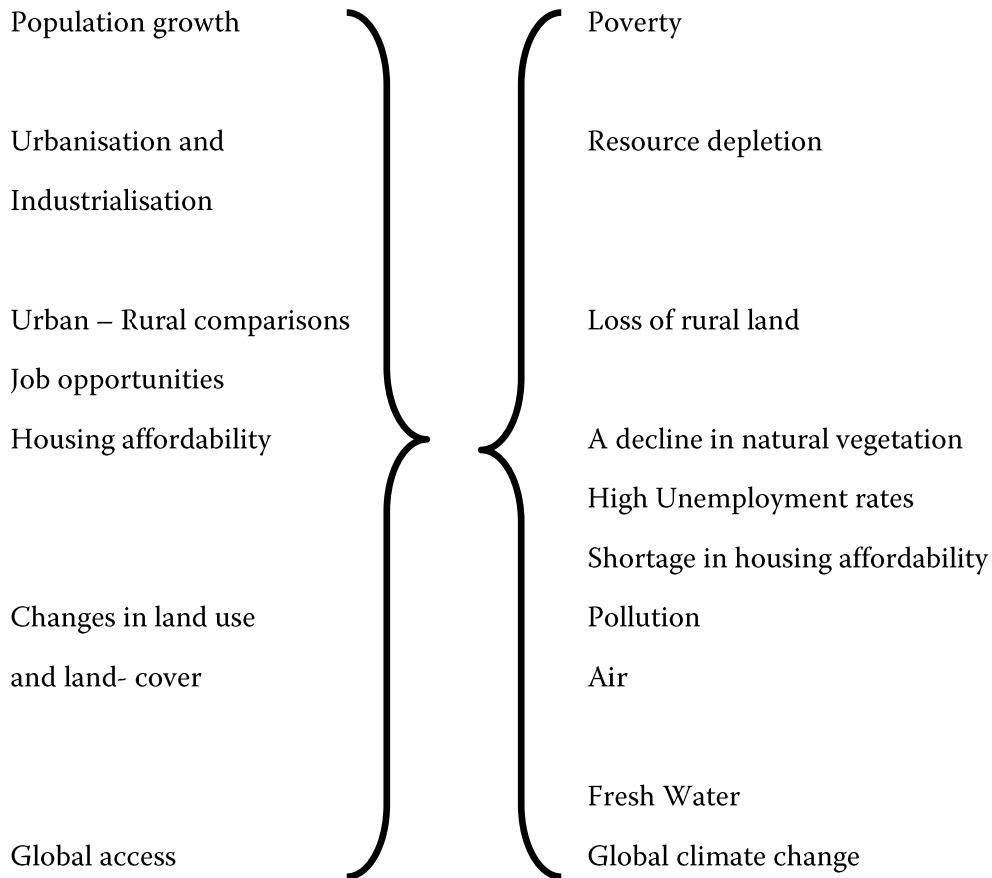


Figure 2. Major socio- economic trends in Syrian urban growth

4 Urban- rural comparisons

Significant socio- economic changes, which took place in Syria society after independence in 1946, accelerated population from rural to urban areas, of which Damascus, Aleppo and Homs always received the largest portion. The factors promoting rural- urban migration consisted of planned growth of industries, mechanisation of agriculture and a limited success of agrarian reform in the rural areas. There are essentially two ways in which a country becomes urbanized. The first way is through the natural growth of the urban population. The second way is by rural-urban migration.

In Syria, rural poverty and caste are forcing many people, especially the unskilled and the landless to seek employment in the large cities. Rural poverty, the hope and often the reality of better chances for work and income in the city and improved transport encourage this movement (Clarley and Christie, 2000, p. 15). In the rural to urban population shifts over the past century, cities have provided a large proportion of the population, with social services and shelter. The importance of urban-urban migration should not be underestimated. Between 1995 and 2000, 295,000 people representing 2.1% from the whole Syrian population migrated as follows (Alsalmee, 2003):

- from rural to urban 44%;
- from urban to rural 27%;
- from rural to rural 6%;
- from urban to urban 23%.

Although Syria is still dominated by rural-urban immigrations, a new trend has emerged demonstrated by urban-rural migrations from 1995. The level of migration varies between cities due to different reasons, such as job opportunities, house prices and security. The largest cities in Syria have accounted for around 42% of the country population since 1960, and more than 44% by 1970 (Alsalmee, 2003). According to UNCHS (Habitat 2001, p. 13) in Syria “urban growth rates will remain higher than total population growth rates in the foreseeable future. ... Urban growth has been the result of rural-to-urban migration as well as high fertility and declining rates of mortality.”

5 Planning and Administrative

Increased industrialisation and urban growth, in the absence of comprehensive planning and regulation to tackle the pressure on the local environment, have caused adverse impacts during over the last two decades. The energy sector is the major polluter in the country, because of the increased burning of fossil fuels in the form of petroleum products in all the economic sectors, i.e. transportation, industry and power generation as well as domestic applications (Jaber and Probert, 2001, p.126).

Also, severe inequalities of opportunity continue in Syria. This is identified in access to land, clean residential environments, nature reserves, as well as basic

services: the poorest have least access to these amenities. One of the most important urban issues due to the rapid increase of population and rural-urban migrant is the lack of use of the existing planning policy and regulations which were implemented decades ago. These regulations do not meet the current scenario demand and aspirations. Urban governments handle urban growth piecemeal. The absence of long-term vision for urban growth and poor integration urban policies has always been the case in Syria in urban planning. The chaotic situation has generated complex urban problems, manifested in the form of vast urban growth on agricultural land, daily commuting to the inner city, increased rate of private automobile dependency, and increased rates of air and water pollution.

Syria has been through a series of urban planning strategies since 1970 – which had a main objective of developing the agro-industrial economy and called for reaching a “balanced population distribution”. However, some of the early applied plans between (1970-1976) have not been further updated and therefore the strategies have not met the demand of the increased of the population (Al-Cheikh Mahmoud, 1998, p. 288). The Syrian urban planning policies responded to urban issues without fully taking into consideration the consequences of current decisions on present and future generations. Additionally, the Syria urban government envisions sustainable urban development from a very acute perspective, taking account mainly of economic considerations, without fully understanding the strong interdependence of the social, environment and the political aspects embodied within the sustainable urban development framework (Ibrahim, 2007; Alsalomee, 2003).

6 Economic Issues

The growth of cities in Syria and the concentration of human population in large metropolitan areas present huge challenges for modern urban societies. The form of construction of businesses, housing, roads, leisure centres, and the metropolitan regions face the growing problems of urban sprawl, including a decline in natural vegetation, wildlife habitats and agricultural land due to the increased number of migrations from rural to urban areas. Economic growth drives urban expansion to require more land for various urban needs. This expansion takes the form of (Ibrahim, 2007, p. 39):

- Housing needs to fulfil the needs of the growing number of families.

- Transportation needs in the form of creating an accessible road network for travel-to- work and commercial needs.
- Social and commercial activities required to fulfil the needs of the urban population.
- Degradation of natural and built environment because of the increase of economic activities and urban sprawl.
- Urban and economic are sources of employment. This has resulted in a redistribution of work from rural to urban activities (labour force who works on natural vegetation has been declined from 21.1% to 13.6% (Alsalmee, 2003). The differences between the two have been seen in other activities focused in cities such as (trade activities, industry...). The continuous reduction in labour force in rural areas has dramatic consequences on rural development.

According to El Laithy and Abu- Ismail 2005, during the period from 1996-1997 to 2003-2004, all regions witnessed a slight increase in their GDP (Gross Domestic Product) per capita and the average per capita expenditure grew from 3,085 Syrian Pound (SP) (around \$ 62) to 3,541 SP (\$71) per month, representing an annual growth rate of 1.9%. There are, however, major differences in expenditure per capita at the sub-national level – with GDP per capita expenditure being higher in the Southern part of Syria, totaling 4,110 SP (\$83) per month (with an annual growth rate of 2.1%). Per capita expenditure for the North-Eastern region on the other hand has remained at 3,487 SP (\$70) per month in 2003-2004.

The Middle region recorded the highest rate of growth of all four regions (3.9% annually), while the Coastal region recorded the second highest per capita GDP in Syria at 4,023 SP (\$81) per month. Its annual growth rate however was the lowest, 0.56%, per year (El Laithy and Abu- Ismail, 2005, p. 3). A research carried out by Government of Syria, UNDP found that the incidence of poverty in Syria has decreased from 14.3% in 1996-97, to 11.3 per cent in 2003-2004. On the whole, the poverty rate in Syria appears to be in line with more affluent countries such as Lebanon, Jordan and Tunisia. However, the study revealed, in 2003-2004, almost 2 million individuals in Syria (11.4% of the population) could not obtain their basic food and non-food needs (El Laithy and Abu- Ismail, 2005, p. 1).

GDP growth indicated Syria has an issue of a declining contribution of investment to growth and a significant reliance on oil exports. On the supply side, growth in agriculture and mining sectors was the driving force behind the episode of high growth (1996-1998). Subsequently, both sectors were hit hard by unfavorable external factors (oil prices and rainfall), which caused the overall rate of growth to decline despite a noticeable rise in the contribution of services in the later period.

Thus, there are three main challenges facing the Syrian economy over the coming decade, which directly and indirectly influence the prospects for poverty reduction (El Laithy and Abu- Ismail, 2005, p. 21):

1. *there is the challenge of accelerating and establishing a sustainable foundation for economic growth:* economic growth in Syria faces a sustainability problem. Firstly, the Syrian economy is typically characterised as highly centralised and under full public sector control. Foreign trade was exclusive to public sector enterprises, foreign investments were restricted and, with the exception of a small number of public enterprises, most of the production was geared towards satisfying local demand. Secondly, the growth of the Syrian economy has been held back by oil revenues and the change in oil prices. This implies non-oil exports should increase dramatically to offset the expected loss of foreign exchange resources.
2. *there is the problem of growing unemployment.* In this respect, Syria faces a serious challenge. Unemployment has been steadily increasing in Syria (from 5 % in 1981 to between 11.6-16.2 % in 2002). Each year over 380,000 people, with varying degrees of education and skills, enter the labor market, which does not offer sufficient job opportunities. This is associated with a substantial increase in the size of the labor force particularly of the younger age groups who also constitute a bulk of the new job seekers in the labour market. Considerable investments will be required in order to accommodate the growing demand for jobs and to improve the quality and skills of the labour force to meet the challenges of globalization.
3. *the Syrian public sector requires major financial and operational restructuring.* The government's main challenge is to find viable and cost-effective measures to tackle the fundamental problems of technology, labour and debt in the public sector companies so as to increase their productivity and reduce their fiscal burden. This will significantly improve the public sector's contribution to growth. Judging from other country experiences, the rehabilitation of public sector enterprises can be a very costly process since a large proportion of firms may need both financial and operational restructuring, i.e. those with large debts, poor market prospects, technological weaknesses, and excess labour. One of the greatest challenges to the economic reform program in the future will be to re-vitalise the more troubled segments of its public sector portfolio, without incurring excessive costs in the process.

Unemployment rates increased from 5% in 1981 to 11.6 per cent in 2002 and the percentage of people working less than two days per week reached approximately 812,000 in April 2003 – 16.2% of the labour force (El Laithy and Abu- Ismail, 2005, p. 18). According to the 2003 unemployment survey, unemployment is

concentrated mainly among the youth, mainly in the 20-24 year age group, which represents 24 per cent of the unemployed. In addition, 57% of the unemployed belonged to the lower educational categories. Middle educational categories (mainly vocational and technical) represented 40 per cent of the unemployed. The remaining 3.2% belonged to higher educational categories, (university degree holders) (El Laithy and Abu- Ismail, 2005, p. 18). The recent research study shows that the labour force demand in Syria will be based on the following (Alsalmee, 2003):

- Continue increase of females entering the labour market.
- Reduction in the agriculture labour market.
- The majority of the companies and organisations run by one or two employees- preponderance of micro- enterprises and self- employed.
- A rapid increase in the labour force.

7 Social and Cultural issues

These aspects present challenges for planners especially in relation to policies and actions because they require integrated policies to impact sustainability. In developing world cities low per capita income and high social- class disparities determine a disadvantaged life style that is oriented towards daily survival and by less access to basic social services such as education, health and sanitary infrastructures. All these services allow people to change their habits, to raise their standard of living and avoid environmentally damaging social behaviour (Button, 1992). Many researchers have pointed out to issues related to social- cultural aspects of sustainability due to rapid urban growth in Syria, such as, unemployment rate, crime, poverty, lack of social and community integration. This is coupled with the dramatic consequence of rapid urban growth in housing supply and demand. Housing supply has focused on satisfying the demand from medium and high income households. This issue has obliged families with very low household income to live in one or two rooms. This is contradictory to basic human rights, relating to health, social and moral aspects. In addition, this coupled with the fact low household income coerced to work in low income jobs which does not meet their minimum needs (education, health, security...). In short, the urbanisation is one of serious social and economic inequity between economic groups.

8 Environmental issues

Urban growth and regional environmental problems have originated in cities because of the high concentration of people and the resulting human activities. The process of urbanisation increases the land use and the use of energy with consequent deleterious effects on natural environment. In general, the level of urbanisation influences both levels of energy use and green house gas emissions (see Jones, 1991 and Parikh and Shukla, 1995). The rapid urban growth in Syria highlights the specificity of city problems, in particular the case with growing income inequity and urban segregation, the concentration in Syrian large cities, as well as high levels of pollution and the development of informal, unregulated settlements that often constitute the largest areas of urban residential spaces (Porter and Sheppard, 1998, and Bonine, 1997). Industrial activities operated by both private and public sectors in major conurbations (such as Damascus, Aleppo, Homs, Tartous, and Baniyas) are responsible to some extent for the degradation of the quality of watercourses, ground water, and the surrounding environment. This is mainly due to the lack of sufficient funding to install treatment technologies before discharging polluted effluents to the environment (Johannesburg Summit, 2002, p. 37). Also, the city engendered problems such as traffic congestion air pollution due to daily car usage, daily commuting generations of noise pollution, public safety...etc. as a result, fossil fuel consumption has dramatically increased during the last two decades, so increasing the emissions of air pollutants in the main cities and in the neighbourhoods of new industrial cities.

The main reasons for local air pollution problems are (Jaber and Probert, 2001, p.127):

- Excessive rate of energy consumption and the inefficient use of the limited local resources.
- High sulphur-content in the fuel combusted.
- Use of leaded gasoline.
- Old "vehicle fleet" and the motor vehicles' relatively low (<20%) efficiencies.
- Uncontrolled waste-treatment plants.
- Unpaved roads.
- Burning solid-wastes, including scrap tyres (especially without heat-recovery).

Industrial pollution and vehicle emissions in the more intensively developed regions in Syria were found to be dangerous to human health in the last decades, based on various studies conducted by the national health services. There is a lack

of systematic national air pollutants emission inventories, national ambient air quality monitoring network and industrial emission measurements. The national meteorological monitoring network is old and insufficient (Johannesburg Summit, 2002, p. 11). In addition, Syria is suffering from an accumulating quantity (230 tonnes) of expired pesticides that need to be handled as hazardous wastes (Johannesburg Summit, 2002, p. 26).



Figure 3: Industrial pollution has dramatically increased during the last two decades. Source: Al-Cheikh Mahmoud, 2009.

In Syrian cities, urban growth has a further impact on the basic urban environmental services, such as clear drinking water, sanitary facilities and solid waste collection. In addition, rivers and lakes in major cities are now receiving untreated industrial and domestic effluent and are dangerously polluted. For instance, Barada river in Damascus, with the fast growth of the city population, land and housing developed has increased pressure on water resources, including Barada river which as result has a level of dissolved oxygen of almost zero where waste water are released into water ways daily. In addition, agriculture is the largest water-consuming sector in Syria accounting for about 87% of water use. The domestic and industrial water use stand at about 9% and 4% respectively. While the urban water demands is rapidly increasing due to strong population growth rate (about 3% per annum) and industrial growth, new water sources are becoming scarce and extremely expensive to develop. Water deficits are expected to worsen placing additional stress on all uses. Since drinking water needs are given top priority in the government's policy, water availability for agricultural use could face severe constraints (Salman and Mualla, 2002, p.1).

Pressure on water resources of the country comes from all sectors of the economy with highest demand from agricultural sector. In 2000, the cultivated land area in Syria was estimated at 5.5 million hectares, which accounted about 30% of the total

country area. Twenty per cent of the cultivated land area (1.2 million hectares) was irrigated. The Euphrates and the Orontes basins account for the major share. The total irrigated area increased from 650 000 hectares in 1985 to 1.3 million ha in 2002 (Somi et al, 2001 and 2002). This rapid expansion of irrigated agriculture is mainly attributed to the government policy objective of achieving food self-sufficiency and a remarkable increase in groundwater irrigation. Unfortunately, if water demand at current prices continues to increase in the same way, Syria will experience an alarming deficit between the mobilisable resources and the potential needs in the near future (Salman and Mualla, 2002, p.1).

In a recent research carried out by the National Technical Committee for Sustainable Development in Syria and based on consultations with stakeholder groups from industry, universities, central and local government, environmental issues were ranked in order of priority. National development objectives and economic costs were considered in parallel with the degree of public concern. The NTCS project unit and consultants used the information gained in making a final determination of priorities. The outcome was a list of the priority problems in Syria, in order of importance as follows (the National Technical Committee for Sustainable Development, 2001, p. 12):

- Contamination and depletion of water resources.
- Land degradation and desertification.
- Poor air quality.
- Inappropriate solid waste disposal.
- The growth of illegal unregulated settlements.

In addition, a number of secondary issues were identified which, although limited in extent, are either responsible for acute localized effects or frustrate redemption efforts. These comprised the following (in no particular order):

- Lack of public awareness of environmental issues and sustainable development.
- Inadequate industrial site management and safety;
- Coastal degradation.

Each of those problems has a range of causes cutting across several sectors. To indicate where actions should be focused, the information is briefly summarised in Table 1, which links the priority environmental problems with their effects and causes (the National Technical Committee for Sustainable Development, 2001, p. 13).

Table 1: illustrates a brief summary of each of those problems, Priority problems, effects and causes. Source: the National Technical Committee for Sustainable Development, 2001, p. 13.

Problem	Main Effects	Proximate Causes
<p>Poor quality and depletion of water resources</p> <p>Poor air quality</p>	<ul style="list-style-type: none"> • Eventual loss of agricultural production. • Difficulty in meeting the increased demand of potable water. • Risk of drought. • Increased illness and premature death from waterborne diseases. • Risk of epidemics. • Increased cost of wastewater treatment • Risk of non-communicable diseases (i.e., poisoning and cancer) • Increased illness and premature death from various diseases. • Reduced visibility. • Degradation of public buildings, monuments, historical sites, rubber and plastic materials due to acid droplets and corrosion process. 	<ul style="list-style-type: none"> • Over abstraction of groundwater. • Increased irrigated crops. • Use of inappropriate irrigation methods. • Lack of sufficient sewerage network, treatment plants, and safe disposal methods of sewage solid waste. • Unregulated industrial discharges. • Leachate from uncontrolled solid waste disposal sites. • Lack of National Water Strategy. • High traffic congestion. • Old and poorly maintained vehicles fleet. • Poor quality of vehicle fuels. • Unregulated industrial emissions and absence of EIA. • Inefficient burning of indoor heaters.
<p>Inappropriate solid waste disposal</p>	<ul style="list-style-type: none"> • Public nuisances (odor, vermin, smoke, litter) • Risks to public health • Groundwater pollution 	<ul style="list-style-type: none"> • Inefficient indoor heaters • Lack of sanitary landfills • Lack of hazardous waste repositories • Poor location and inadequate management of disposal sites
<p>Illegal settlements and unregulated town planning</p>	<ul style="list-style-type: none"> • Poor living conditions in unregulated developments • Loss of heritage • Noise, fumes and time loss due to traffic 	<ul style="list-style-type: none"> • Inadequate town planning • Over-crowding • Unclear land tenure system • Rural-Urban Immigration.

9 Urban planning and Housing

The pressures on urban growth has led to a remarkable challenge at national level as a whole, resulting in massive development and expansion to cities and in particular horizontal development in order to accommodate extra residential housing. This situation or phenomena if it continues to develop (the recent trend shows this as a continuous process) this will lead to the situation of Damascus becoming a Mega-city such as Mexico city or Cairo.

Housing is considered as an important need of the community; hence the policies of housing distribution in the community include demand, size, quality and location. Housing has been a major issue in urban policy due to a constant shortage of affordable housing for low-income sectors, which form a large portion in any country. The rapid population growth in cities like Damascus, which has

quadrupled in size since 1950 has made the actual demand for land and housing much more than what the plan projected by the government. Furthermore, the consecutive modifications of the plan constituted a significant hindrance to land development (Amer, 1992 in Al-Cheikh Mahmoud, 1998). This resulted in a widening of the gap between demand and supply of land for housing and other requirements of urban development. Consequently, land prices started moving up excluding an increasing number of people who could not compete with higher income categories in land auction, the only land supply channel existed at that time. Houses the only supplier of which was the private sector, were increasingly going beyond the reach of a large number of people as their prices increased sharply with the shortage of land supply and the increase of its prices (Al-Cheikh Mahmoud, 1998, p. 297-298).

The rapid urban growth in Syria has resulted in the absence of affordable housing, the lack of green and open spaces and severe employment and transportation problems. In Syria the population in large cities has increased up to 8.7 million inhabitants in 2002, this is three times what was the number in 1970. This means either expand the existing dwelling units in 1970 in order to accommodate growing families number in 2002 by about three times, or expand cities three times what was in 1970. The recent studies show that the new required dwelling units is estimated from 15000-20000, whereas the dwelling units being constructed are less than this figure.

New housing is too expensive for lower and middle class workers and has attracted speculators rather than residents. As it discussed earlier, the actual population growth rate is significantly higher than that which projected in the proposed Government plan. This made the housing programme inadequate to the actual needs of the city population. The increasing pressure on land and housing price increased not only their prices but also housing rent in the city. This situation forced many of the new comers to the city, who were not able to have an access to a shelter in Damascus, to seek cheap agricultural land in the periphery, and to illegally construct unauthorised settlements. These areas became a part of the city when its boundaries were extended (Al-Cheikh Mahmoud, 1998, p.298). Despite the huge efforts made by the government to organize and administer the situation in major urban and suburban areas (such as Damascus and Aleppo), irregular human settlements pose a real threat to the surrounding environment and place an immense pressure on limited number of available resources. For example, supply of drinking water for major conurbation is a real problem as well as the management of resulting solid wastes (Johannesburg Summit, 2002, p. 9). The noticeable differences between the actual course of population growth and that one envisaged to support the opinion of authors such as (Mc Auslan, 1985; Doeble,

1986; Payne, 1989; Devas and Rakod, 1993 in Al-Cheikh Mahmoud, 1998) who put a question mark on the appropriateness of the concept of master plan to guide the city development in developing countries (Al-Cheikh Mahmoud, 1993, p. 305).

10 Priorities and the way forward

The challenges identified in this paper are a results of environmental, social, and economic not having been taken adequately into account in preparing previous plans. The absence of any long-term vision for urban development growth and lack of urban policies integration has lead to a chaotic situation which generate various urban problems, manifested in the form of vast urban growth on agriculture land, unavailability and poor quality of housing and infrastructure, socio-economic issues, increase rate of pollution to air, water and land. However, the Syrian government has responded to the urban problems without fully integrating the environmental and socio-economic issues and without taking into account the consequences of current decisions on present and future generation.

The National Strategy for Sustainable Development in Syria introduced the Syrian National Environmental Action Plan which is very major step to: a) integrate the national development plans and environmental management; b) to contribute to the protection of the health Syrian population; c) manage scarce materials and cultural resources and d) to allow economic growth to continue unimpeded by environmental degradation (NTCSD, 2002).

Recently the Syrian Government has ratified a number of international conventions (e.g. Montreal protocol, Climate change, World heritage convention for culture and natural sites, convention on Biodiversity and others). At the national level, the Syrian government has taken major steps such as establishment of Ministry of Environment, the Higher Council for Environmental Safety and General Commission for Environmental Affairs. The Syrian established General Environmental Directorates which will require to be followed at local levels.

The way forward is to research and introduce various approaches to tackle the major challenges related to sustainable urban development:

- Move from the extreme centralisation to the greater, but proportionate empowerment of the local government and participation of private sector and other non-governmental organisations and societies in decision-making
- Make critical changes to the urban planning bodies at the state and local government levels to empower public agencies to plan and implementation more effectively.
- Provide a long-term strategy with targets and a time-frame to meet the state objectives of sustainable urban development agenda and increase the coordination at state and local levels.
- Increase transparency and accountability at state and local governmental level
- Provide training for public and private agency staff which is needed to deliver best practices solutions to urban problems.
- Better mobilise state and private investment to deliver best practise solutions to urban problems.

11 Conclusion

The Syrian government envisions sustainable urban development from a very acute perspective which has not fully considering social, economic and built environment and political aspects embedded with the sustainable urban development framework. The paper argues that in order for the Syrian government to achieve sustainable urban development agenda, it requires to increase the awareness of sustainability at all levels of urban stakeholders (national, local and project). It is also need to encourage them to adopt the principles of urban sustainable development and the use of sustainability assessment tools and techniques where appropriate. The paper also highlighted the need to introduce new polices at all levels to address the problems and challenges facing the sustainable urban development agenda to improve the quality of both human lives and the nature.

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