



Sustainable Development the Way to Overcome Development Challenges In Iraq

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ABSTRACT

The international community identified the components of sustainable development as: economic growth, social development, the protection of the environment and natural resources. The importance of sustainable development in a planning approach comes from its ability to achieve a set of national and comprehensive goals. It aims to improve the living conditions of all people and secure their needs without overuse the natural resources. Iraq has good potentialities like oil, Population: Agriculture: Industries, but there are many challenges facing it, like: spatial balance Challenges (population distribution), economic balance (regional differences), the infrastructure, Unemployment, poverty, illiteracy, and corruption. We think that we can overcome all these challenges depending upon sustainable development.

Keywords: sustainable development, potentialities, socio-economic challenges, future perspective.

1. Introduction

From ancient times Iraq was known as Mesopotamia (Bilad Al-Rafidayn) "land between the rivers: Tigris & Euphrates", and was the cradle of the first human civilizations known to man; wherein arose on the banks of the Euphrates and Tigris the Sumerian, Akkadian, Assyrian and Babylonian civilizations witnessed flourishing the first forms of social, political and economic organizations.

In Iraq was the first historical model of a state that was based on established civic relationships, a pattern of stable management and official institutions. Furthermore, the first centralized authority in Iraq was emerged in response to a growing need for an effective state to oversee the organization of economic life. Moreover, the first attempt by humanity to establish a system of justice was taken place in Iraq too where the first legislative acts known in the world were enforced, the most notable and renowned of which was the Code of Hammurabi (ca. 1792-1750 BC) that included a broad body of laws which was applied throughout the Kingdom of Babylon and established the legal system for the country (Jinan Hatem Issa, et.al, 2010).

Iraq is located in the Middle East at the northernmost extent of the Arabian Gulf north of Saudi Arabia, west of Iran east of Syria, and south of Turkey. The total area of Iraq is 437,072 square km. A spatial analysis of Iraq will be focus on its demography, petroleum, and economic resources specially agriculture sector to know the existing situation and put our view of development depending on sustainability development approach.

2. Potatilities

2.1 Population

The Iraqi population increased from 26 million people in 2003 to 30.5 million people in 2008. It is expected to reach 35 million people by the year 2014. The absolute population increase is the natural result of the rise in the population growth rate, which remained at the high rate of 3.1 percent during the 1970s and 1980s. Iraq's population growth rate has remained, and is expected to remain, at 3 percent over the mid- and long term because of increased birth rates and decreased death rates resulting from the expanded provision of preventive care and medical services.

The economically active population falls within the 15-64 years age group. The 1997 General Population Census indicates that 23.5 percent of the total population participated in economic activity .This figure increased to 24.8 percent in 1987, declined to 23 percent in, and then increased after 2003 to reach 29 percent percent in 2008.

There was a decline in the rate of participation in economic activity by the working-age population from 45.2 percent in 1987 to 43.6 percent in 1997. There was a relative increase after 2003, when the rate reached 52 percent in 2008. Effectively, participation by the working-age population in economic activity fell by half. These data are considered to be statistical confirmation of the presence of unemployment in the ranks of the actual labor force. However, looking at the distribution of the economically active population by gender males accounted for 46 percent and females accounted for 11 percent in 2008. This explains the decline in the rate of female participation in economic activity, despite the comparable ratio of males to females in the population as a whole, as well as their comparable ratio in the working age population, where females accounted for about 53 percent of the total in both of these categories in 2008. In contrast, the percentage of male participation in economic activity accounted for about 83 percent as compared to females, whose participation was only 17% percent per 2008 statistics (Central Statistics Organization, 2008).

The active population falls within the 15-64 years age group in Iraqi is more than 52 percent, this represents good potential can help planners to investment through providing good labor force that we need in development plans, taking into consideration the changes that will occur in the future. The status of Iraq's population will change in the next thirty years, as shown in table 1.

Table 1: The status of Iraq's population 2005- 2050

Age group / year	2005	2010	2015	2020	2030	2040	2050
0-9	31.0	27.7	27.4	27.0	24.8	23.3	21.9
10-14	12.2	11.9	11.5	11.2	11.2	10.4	10.0
15-24	20.1	20.5	20.1	19.2	19.1	18.7	17.8
25-29	7.9	8.3	8.2	8.5	7.9	8.2	8.0
30+	28.8	31.5	32.8	34.1	37.0	39.4	42.3
Sum	100.0	99.9	100.0	100.0	100.0	100.0	100.0

Source: The First national report of the status of Iraq's population, 2010.

2.2 Agricultural Sector

About 27 percent of the total land area in Iraq (43.3 million ha) is considered suitable for cultivation. This represents 11.1 million ha of which 4.4 million ha are classified highly suitable, 4.7 million ha moderately suitable and 2 million ha less than suitable. About 50 percent of the land suitable for cultivation is irrigable, and the remaining 50 percent is rain fed. Water resources are abundant in Iraq: the Tigris and Euphrates Rivers supply the major share of irrigation water for agriculture production in the country at 77 billion m³ in good years and 44 billion m³ in drought years (FAO/WFP, 2003).

Agriculture is a critical factor for poverty reduction because the majority of the poor lives in the rural areas and depends on agriculture for their sustenance. The World Bank has published the World development report for 2008 in which they indicate that "In the 21st Century, agriculture continues to be a fundamental instrument for sustainable development and poverty reduction (World Bank, 2008, Chelston W. D. Brathwaite, 2009).

Iraq relies heavily on imports to meet its food requirements. Food self-sufficiency is not expected to be achieved in the foreseeable future due to 2 main reasons, the growth in population, expected to reach 40 million within a decade, resulting in an increase of consumption, and a decline in the agricultural production. As a result of the rise in purchasing power in Iraq, new types of food entered the local market, such as diet and high nutritional value food, organic food and western food.

Iraq imports 80% of its food needs, Iraqi Ministry of Trade imported in 2011 food supplies for a value of US\$ 6 billion, Iraqi private sector food imports in 2011 reached Nearly US\$ 10 billion. The annual food demand in Iraq increased by 25% in 2011 compared to 2010, local product satisfies only 20% of the local market demand according to the ministry of agriculture (The 5th International Exhibition for Agriculture, 2012).

Local Iraqi agricultural production and the food industry should be encouraged to complement the food diversity of the PDS ration, locally appropriate technology should be applied immediately to improve the water and sanitation infrastructure, as major rehabilitation of the treatment plants will take much longer. Furthermore, once complete rehabilitation of the agricultural sector has been carried out and normal production activities have resumed, an agricultural policy framework should be set up to create, inter alia, a conducive agricultural market and a price environment that would give local producers enough incentives to increase food and agricultural production.

Table 2: Iraqi food needs 2012

Item	Annual Production	Annual Demand	Self-Sufficiency
Red Meat	175000 TONS	500000 TONS	30%
White Meat	140000 TONS	300000 TONS	45%
Fish	65000 TONS	120000 TONS	55%
Wheat	2 MILLION TONS	4 MILLION TONS	50%

Source: The 5th International Exhibition For Agriculture, 2012, Food Processing And Packaging, Erbil, Kurdistan Region – Iraq.

2.3 Petroleum

Iraq's oil and gas sector is a predominant factor in sustainable development in Iraq. Expected to become among the largest in the world, Iraq's energy sector already dominates the national economy. In 2011, oil revenues reached approximately US\$ 83 billion and oil and gas accounted for about 60% of GDP, 99% of exports and over 90% of government revenue.

Priorities for governance focus on the management of oil and gas resources and corresponding revenue in a strategic and sustainable manner. From an economic and financial perspective, the size of Iraq's oil revenues could hamper efforts to diversify the economy. Oil export revenues have led to an appreciation of the real exchange rate. A stronger currency generally has a negative impact on non-oil sectors, first by making domestic products less competitive compared to foreign products and therefore causing a possible drop in exports and rise in imports, and also by raising production costs for non-traded sectors (UNDP, Iraq, 2012).

There are huge crude oil reserves confirmed in Iraq, putting it in third place worldwide, and large gas reserves. There is a competitive advantage in the crude oil activity due to the low extraction cost as compared to other oil producing countries, besides; Iraq has approximately 80 years of experience in oil operations. The oil and gas activity plays a vital role in overall economic performance in Iraq (National Development Plan 2010-2014, 2010).

Iraq's energy sector holds the key to the country's future prosperity and can make a major contribution to the stability and security of global energy markets. Iraq is already the world's third-largest oil exporter and has the resources and plans to increase rapidly its oil and natural gas production as it recovers from three decades punctuated by conflict and instability. Success in developing Iraq's hydrocarbon potential and effective management of the resulting revenues can fuel Iraq's social and economic development (IEA, 2012).

3. Socio – Economic Challenges

3.1 Poverty

23% of Iraq's population lives below the poverty line of US\$ 2.2 expenditure per capita per day. Iraq's youth carry a heavy brunt, with unemployment for Iraqis aged 15-24 at 23% compared to 10% and under for older age groups. At least one of every three women aged 15-

29 is unemployed. With 39% of Iraq's population under the age of 15, the growing number of young Iraqis entering the labour force will make it increasingly important to stimulate Iraq's economy and create new employment opportunities (UNDP, Iraq 2012).

A study of deprivation map 2004 showed that 31% of household and 34% of individuals suffer from deprivation from basic needs. . The rate in rural areas is three times than that in urban areas. According to data from the Iraqi household social and economic survey 2007 , there has been a slight increase in the rate of deprived households due to rising rate of deprivation from infrastructure (water and electricity) and the exceptional circumstances prevailed during the survey year (national strategy for poverty reduction, 2009).

Table 3: Major indicators of poverty in Iraq 2007

Indicator		value
Poverty line ID000/ individual /month	national	76.9
	food	34.3
	Non-food	42.6
Poverty rate(%)	total	22.9
	urban	16.1
	rural	39.3
Number of poor (Million people)	total	6.9
	urban	3.5
	rural	3.4
Poverty gap (%)	total	4.5
	urban	2.7
	rural	9.0

Source: national strategy for poverty reduction 2009.

The proportion of population their daily income is less than one dollar (27.5%) For the year 1990, in 2005 this proportion decreased into (23%).

Table 4: Percentage of population living below National poverty line

Year	Urban	Rural	Total
2007	16.1	39.3	22.9

Central Statistical Organization, 2011

3.2 Unemployment

Unemployment may be the social challenge with the most negative effect on the economy and society as a whole. The unemployment rate was no higher than 5 percent per statistics 1987. However, after 2003, unemployment rates increase to 28 percent pursuant to the CSO's 2003 employment and unemployment survey. The rate subsequently declined to 18 percent in 2006 and 15 percent in 2008 as a result of the employment policy adopted by the government after 2005 that aimed to increase employment by the state and the security apparatus (central statistical Organization, 2003, 2006, 2008).

The employment and unemployment survey data showed that unemployment rates among males were higher in 2003 reaching 30.2 percent and declined to 14.3 percent in 2008, in contrast, unemployment rates among females increased in 2008 to 19.6 percent after they had been 16 percent in 2003. The unemployment rate for youth between the ages of 15 and 24 years increased to 30 percent, and the rate for males within that category was 30 percent, as compared to 32 percent for females. Individuals in the 60-64 years age group had the lowest unemployment rate at 4.63 percent based on the results of the 2008 survey.

Table 5: The relative distribution of the unemployment depending upon the academic level 2003-2008

Academic level	primary	medium	Secondary	Diploma	college	Higher Diploma	MSC	PHD
year								
2003	55.10	13.48	8.09	9.63	12.45	0.47	-----	-----
2004	54.60	15.78	6.93	10.69	11.51	0.12	0.29	0.02
2005	52.89	15.45	7.09	11.90	12.40	0.08	0.28	0.01
2006	18.30	18.19	17.15	15.45	19.76	6.66	4.80	0.00
2008	12.20	10.40	12.2	13.4	14.30	6.50	3.70	0.00

Source: ministry of planning, central statistical Organization, employment survey for the years 2003-2008

Table 6: The Unemployment Rates by type and the environment 1977-2008

years	Urban unemployment rate			Rural unemployment rate			National rate		
	male	female	total	male	female	total	male	female	total
1977	3.1	5.2	3.3	4.1	0.3	3.1	3.5	2.1	3.2
1987	3.5	7.8	3.5	3.6	3.6	3.6	3.1	7.5	3.6
2003	31.0	22.3	30.0	28.9	6.7	25.4	30.2	16.0	28.1
2005	19.17	30.0	24.59	32.3	2.6	23.4	25.7	27.8	17.97
2008	15.4	43.6	16.3	14.89	8.26	13.34	14.33	19.64	15.34

Source: Central Statistical Organization, The annual statistic for the years, 1977, 1987,2003,2005,2008

3.3 Infrastructure

Sustainable infrastructure forms part of a larger socioeconomic model and is a critical function in facilitating the development of other basic structures in society such as business, education and health (Richard H Brown, 2005).

Infrastructure can affect growth through many channels .In addition to the conventional productivity effect, infrastructure is likely to affect the costs of investment adjustment, the durability of private capital, and both demand for and supply of health and education services. Many of these channels have been tested empirically. This is reflected in the wide variety of findings in the abundant empirical literature on infrastructure and growth or productivity (Marianne Fay, et, al, 2010).

Iraq is struggling with a huge infrastructure deficit, and the government has prioritized investment into this area as it drags on the business environment and broader economic recovery. U.S occupation has destroyed most of the infrastructure in Iraq and electricity grids, water and sewage, roads, bridges, airports, ports and much of the private educational institutions, health, hotels and public facilities. The Iraqi Planning Minister said that we need about \$ 400 billion to restore our infrastructure.

We have to build sustainable infrastructure system that will support and enhance the well being of our community. Simultaneously, a sustainable infrastructure system will preserve the natural and social environments that enable us to pursue our economic and social development in a sustainable manner.

3.4 Electricity

Electricity activity is considered the economy's main engine as it is used in all economic, service, and industrial activities. In addition, individual consumption of electricity is considered one of the main indicators of society's level of prosperity. The national electricity generation rate in Iraq reached approximately 2,958 megawatts in the period prior to the Second Gulf War in 1990. This figure increased to 4,526 megawatts in 2008; an increase of 150 percent. In contrast, demand ranged from 5,442 megawatts in 2004 to 10,000 megawatts in 2008. So, despite the increase in production, the country still suffered from a shortage of electrical energy of 38 percent in 2008 (National Development Plan 2010-2014, 2010).

Table 7: Proportion of households without access to electricity or commercial electric energy

Years	Public network %	Private generator %	Participated in generator %	Solar energy %	There is no source %
2004	3.0	92.0	77.0	99.0	0.0
2007	2.5	50.8	49.3	100.0	0.2

Central Statistical Organization, 2011

3.5 Water Shortage

The shortage of water has been a main cause of the decline in Iraqi agriculture. This not only affects agricultural output but also reduces the supply of electricity in Iraq—particularly southern Iraq—by an estimated 50 percent. Two of the country's four power-generating turbines stopped working as of August 2009 due to the rapidly falling levels of the Euphrates River, and the other two were expected to fail if water levels dropped any further. Low rainfall is only part of the water problem.

3.6 Schooling and Higher Education

Iraq suffering from sectarian conflict and terrorist attacks has led to further destabilization: Insufficient supply and poor conditions of schools Gap of 4000 schools. Pressure on secondary resources, 70% of schools lack water and toilets, No labs, very limited

books and libraries , 2751 schools heavily damaged,2400 experienced looting and damage , Level of Attendance: 2003 nearly 100% , 2004 86% , 2005 75% , 2006 30% (Dahr Jamail Nov.11, 2006 and Islam-on-line).

80% of higher education institutions in Iraq had been destroyed since the U.S. occupation began in 2003. The ongoing reconstruction process includes only 40% of higher education institutions, while continuing migration of professors and teachers to other areas, so that about 40% of them left since 1990. Still percentage-school for students enrolled is 55%, and 74% only of those aged between 15 to 24 are able to read and write. The number of students who enroll in the first phase and arrive at the fifth stage increased from 83.7% in 1998 to 88.1% in 2002 and to 90% in 2006.

Mike Powers, 2008 describe the situation of Schooling and Higher Education in Iraq as the following:

Table 8: The situation of Schooling in Iraq 1976-2004

Years	The situation
The Golden Years 1976-1986	1976-1986 Primary students: plus 30% (females plus 45% from 35 to 44% of total) Primary teachers: plus 40% Secondary students: plus 46% (females plus 55% from 29 to 36%) Higher Level students 1988: 209,818
The Years Of Decline 1984 to 2003	From 1984 to 2003, war and sanctions * Gross enrolment dropped * 3.3% of GNP and 8% of total budget on education * Average cost per student US 47 dollars * Dropout rate 20%, twice as high for girls * Repetition rate 15%
The Crisis Years After 2003	UNICEF: October 2004 Overall enrollment surged in 2003/2004 2000 3.6 million in primary school 2004 4.3 million i.e. 2.4 million boys and 1.9 million girls – similar to pre-war ratios One quarter run double or triple shifts per day 14,000 schools but only 11,368 actual school buildings 2,700 need major rehabilitation In March 2003 over 700 primary schools had been damaged by bombing. Of those, a third in Baghdad – with over 200 burned and over 3,000 looted.

Problems/Challenges in 2003	Insufficient supply and poor conditions of schools Gap of 4000 schools Pressure on secondary resources 70% of schools lack water and toilets No labs, very limited books and libraries Outdated curriculum, no teacher training
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Source: Mike Powers, 2008

A study of UNESCO, 2008 indicate that 49% of school buildings in dire need for renovation , 21% extremely unsuitable , 30% acceptable status ,Student to Classroom ratio: 46:1 , Net enrolment 2000 93%, 2006/7 54% (8% gender gap), 220,000 school-aged children internally displaced and often lack residency papers, Only 78% transferred from grade 6 to secondary, National Secondary Gross Enrolment fallen to 46% in 2006/2007, (female only 39%), high repetition rates (UNESCO, 2008).

Table 9: Net enrolment rate in primary education

Year	2000	2001	2004	2005	2006	2007	2008	2009
rate	80.3	88.5	86.6	86.2	85.8	84.8	89.2	89.0

Central Statistical Organization, 2011

Table 10: Adult secondary schooling attainment level

Year	2006	2007	2008	2009
Percentage %	40.1	57.9	39.7	40.2

Central Statistical Organization, 2011

3.7 Housing

Housing is a major priority for Iraq which already faces an acute housing shortage 3.5 million housing units are required in the next five years alone (Leanne Case, 2009).

3.8 Health

2.5% of the Iraqi population has died in this, the largest major international conflict of the 21st century, should be of grave concern to everyone (Burnham, et al, 2011).

Iraq faces enormous health challenges. These include rebuilding the infrastructure, strengthening management, re-organizing the pharmaceutical sector and dealing with drugs shortages, reducing health risks in the population, retraining the workforce and tackling the main causes of the rise in communicable and non-communicable diseases.

The overall aim is to achieve better health for all and to reduce health inequalities while providing high quality services that are affordable, accessible and responsive to the expectations of the population. It requires investment in improved water and sanitation services, in better environmental health and in education (Ala'din Alwan, 2004).

The deaths recorded for the pre-invasion period were almost entirely non-violent deaths. Immediately post-invasion, the death rate due to non-violent causes dropped slightly, then stayed level for the next period, but began to rise in the period from June 2005 until June

2006. The excess death rate due to non-violent causes is estimated to be 1.2 deaths/1,000/year for this most recent period of time, and 2.0 deaths/1,000/year for the first six months of 2006. It is not possible to say that this number is a statistically significant increase over the pre-invasion baseline death rate. However, this may represent the beginning of a trend toward increasing deaths from deterioration in the health services and stagnation in efforts to improve environmental health in Iraq (Gilbert Burnham, 2006).

Table 11: Death rate per 1,000 persons each year 2003-2006

year /death rate	Crude mortality rates	Excess death rate	Violent death rates
Pre-invasion	5.5		
2003- 2004	7.5	2.6	3.2
2004- 2005	10.9	5.6	6.6
2005- 2006	19.8	14.2	12.
Overall	13.2	7.8	7.2

Source: Gilbert Burnham, 2006, the Human Cost of the War in Iraq a Mortality Study, 2002-2006.

Table 12: Average of dead children under 5 years old/ mortality child per 1000 life birth

year	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010
rate	19.5	20.6	18.9	16.8	56.0	41.0	35.1	36.0	29.5	28.7

Central Statistical Organization, 2011

3.9 Administrative Corruption

Corruption in Iraq today exceeds the extent of more than 10% of the gross domestic product. The Corruption Perceptions Index ranks countries and territories based on how corrupt their public sector is perceived to be. A country's rank indicates its position relative to the other countries and territories included in the index. This year's index includes 176 countries and territories, the 2011 Corruption Perceptions Index shows that Iraqi rank was 169 from 174, in 2012 became 170 from 174.

4. Future Prospects

In the light of human and material resources in Iraq and the challenges faces it in different fields, we believe that sustainable development will be the best approach must be adopted to investing these capabilities to ensure the advancement and development of the country and to overcome all these challenges. We believe that the adoption of Strength sustainable development is the most effective method that combine different planning styles, sectoral and spatial, (economic, social, environmental, political, urban, rural, present and future). This strategy help people to meet their basic needs and enjoy a good quality of life through a rational investment of the sources of wealth to ensure the well-being of the present generation without compromising the rights of future generations.

4.1 Vision

Iraq is seeking to be a peaceful and stable nation under the auspices of a federal democracy. It is also seeking to be an effective nation that functions in accordance with market mechanisms and a regional economic power that complements and is part of the international economy in a manner that embodies the principle of international partnership.

4.2 General Goals

- 1- The overriding goal is to live within environmental limits and a just society, the existence of a sustainable economy, and good governance, and properly informed.
- 2- The ability to produce goods and services on an ongoing basis, and avoid extreme sectoral imbalances to reach a sustainable economy is strong and stable and prosperous provides opportunities for all.
- 3- Ensure a strong community, and a healthy, just and educated and security guarantees to meet the diverse needs of all people, and Ensures good governance, and support education and training that promotes sustainable development. Provision of social services including health and education, and gender equality.
- 4- Protecting our natural resources and enhance the environment and includes key commitments in the strategic issue how an integrated policy to protect and improve the natural resources and work to reduce gaseous emissions from various sources in the country.

4.3 Priorities

- 1- Crude oil extraction, as it guarantees sustainable financial resources at this stage.
- 2- Electricity as one of the central activities relied upon by all production and life activities and areas.
- 3- Agriculture, as it guarantees food security, reduces food imports, and creates a vast number of job opportunities that can reduce unemployment in rural areas and alleviate poverty.
- 4- Social development services, as it is the sector focused on building up the citizenry and providing a social umbrella. It includes the basic infrastructure supporting services (water and sanitation, education health, culture, youth and sports, as well as enablement in the area of housing), other services related to the MDGs, and achievement of strategic poverty alleviation objectives.
- 5- Transportation, as it is an important sector that supports the flow of economic activity and increases its efficiency. It also has a profound impact on the population's quality of life.
- 6- Conversion industries, as Iraq possesses capabilities, in terms of natural and human resources, that guarantee it a comparative advantage in many industrial activities such as petrochemical, chemical fertilizer, cement, and food industries. They also constitute a crucial starting point for diversifying the national economy, invigorating participation by the private sector, and ensuring job opportunities.

5. Recommendations

Recommendations include development of policies designed to link the oil export sector with the rest of the economy, to encourage more investment by the private sector, to expand and improve the productivity of the agricultural and industrial sectors, and to develop inter-nation regional cooperatives capable of expanding the market for locally produced goods.

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