

Geographical analysis of Sustainable Social Development Indicators in Babylon Governorate for the Year 2022

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Abstract

The concept of Sustainable development emerged strongly in the last two decades of the twentieth century with the emergence of the environmental movement and Contemporary developmental trends. The concept is multifaceted and multidimensional, It includes social, economic, environmental, and political dimensions that may differ the contents of each are according to political ideologies and programs, and according to the different cultures and civilization of the countries of world. Sustainability is an invitation to adopt a new way of thinking and dealing more responsibly towards the surrounding environment. Sustainable development is based on several indicators that reflect the main trends in the environment, Sustainable development is based on several indicators that reflect the main trends in the environmental, social, economic and political system. These indicators measure what concerns people as the goal and means of sustainable development. Human and social sustainability indicators are of great importance in the development process and include many indicators, the most important of which are population, education and health. In Babil Governorate, there are many potentials that can be invested in the social sector to achieve the goals of sustainable social development. The research aims to explain the conditions of Sustainable development in the governorate by identifying its indicators and presenting them to decision makers, to transform the image of its reality into development programs towards the future aimed at improving the social conditions of the population, by emphasizing the dimensions of social sustainability.

Keywords: *Geographical Analysis, Babylon province, Sustainable development, Social indicators, Development dimension.*

1. Introduction

The definition of sustainable social development is to raise the level of health and educational services, and strive for stability in demographic growth, and the basic function of social development is to redirect resources to ensure that the basic needs of society are met or improve their standard of living, so we find that social development is based on several problems, most notably the eradication of poverty, and emphasizes the importance of building the human being to include the elements of material and non-material empowerment, This is reflected in the manifestations of education, health, opportunities to earn income, get rid of poverty and insecurity, and ensure the participation of all in benefiting from the gains provided by the sustainable development process, and this requires securing a sustainable population level appropriate to the size of

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the productivity of the ecosystem, and exploiting it optimally and in a way that guarantees the right of current and future generations.

1.1 Search problem.

What is the most important indicator of sustainable social development that can be obtained in Babylon?

1.2 Search hypothesis.

The most important social indicators for which data can be obtained are population, health and education indicators.

1.3 Search goal.

The research aims to know the social indicators in the study area, the extent to which they achieve sustainable development and the extent to which social potential is invested in achieving sustainable development goals in Babylon governorate.

1.4 Research curriculum.

The fundamentalist or systemic curriculum was followed by selecting a core theme first, sustainable development, and then moving to the regional curriculum applicable to a selected school region, Babylon Province.

1.5 Limits of Study Area

The province of Babylon is located astronomically between two latitudes (7.37–8.38) in the north, and between longitudes (42.43–50.45) east, and thus it is located in central Iraq within the sedimentary plain area, bordered to the north by the capital Baghdad, to the northwest by Anbar Governorate, to the south by Najaf and Diwaniyah, to the west by the holy Karbala, and to the east by Wasit Governorate. The governorate includes (4) districts, and (16) administrative units.

2. Sustainable development.

Sustainable development is the efficient management and investment of basic natural resources without waste, with continuous maintenance and rehabilitation of the investment process and utilization of those resources combined with human development in its various patterns. It is also characterized by a sustainable development that aims to pay attention to the interrelationship between man and his natural environment and between society and development, and to focus on quality and not quantity, such as job creation and income distribution among members of society, health efficiency, education and housing.

2.1 Sustainable Development Goals

The main objectives of sustainable development are:

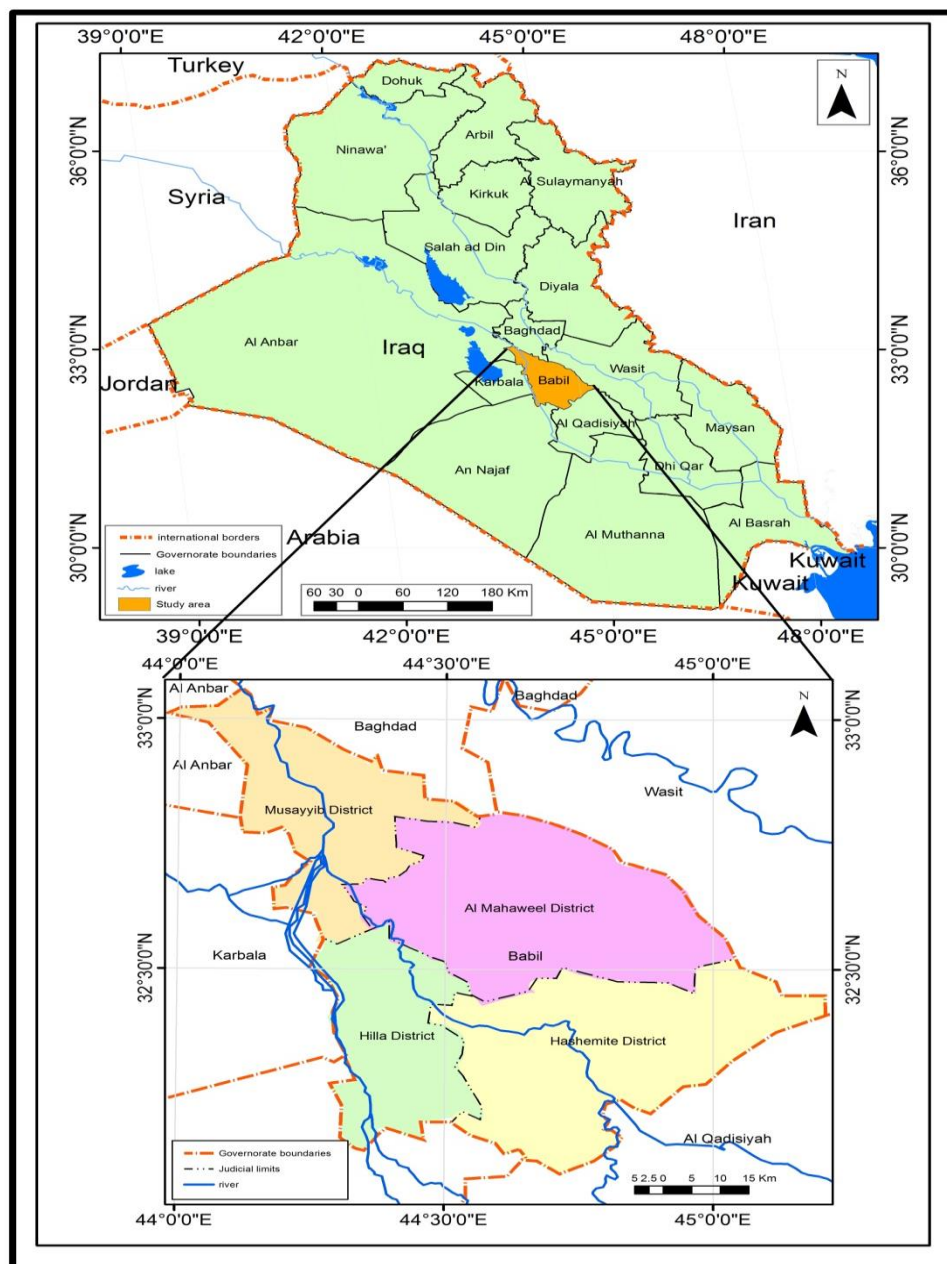
1. Contribute to the economic, social and political unity of the country's territories.
2. To ensure the optimal use of human resources and the need for all branches of economic activities, whether agricultural, industrial or service.
3. Integrate the environmental dimension into the process of spatial development and optimize the use of the resources of the full, accessible, natural and human spatial environment .
4. Access to quality education for all, gender equality and reduction of class and racial disparities.
5. To achieve some alignment between population growth and available resources and possibilities and their non-depletion through optimal planning for the rationalization and exploitation of natural and renewable resources, the protection of the environment

and the investment of human capacities for economic progress and increased national and individual income.

2.2 Sustainable social development.

It is the process through which the personal and institutional capacities of members of society are increased and managing resources to produce sustainable improvements, equitable distributions, in quality of life and in harmony with their own aspirations and to provide future generations with a volume of opportunities similar to or perhaps more than current generations have been provided with, Another goal of social development is to develop and improve human abilities. in reading, education, health and nutrition, so it considers human beings to be both a goal and a means of development. human beings are the true wealth of nations that grow with humanity's well-being.

Map (1) Babylon Governorate Location from Iraq



Source: Ministry of Water Resources, Survey Authority, Iraq Administrative Map, Scale 1000,000: 1, 2018.

2.3 indicators of sustainable social development

The following indicators include:

1. Population indicators.
2. Educational indicators.
3. Health indicators.

3. Social indicators of sustainable development in Babylon governorate:

During available data and field study, indicators of sustainable social development were as follows:

3.1 Population indicators:

The following include:

3.1.1 Poverty eradication index:

This goal is the first sustainable development goal, Related to several other objectives, the concept of poverty reflects the economic situation of material poverty. It also expresses the social status of poverty of a particular category of society. Poverty is an indicator that measures the relative importance of the poor in society. The ratio of the poor to the total population, regardless of the level of income of the poor, reflects Iraq's poverty rate. (22)%. In Babylon governorate, 11%, which requires the search for solutions to eliminate the effects and risks of poverty through development plans and government actions nationwide.

3.1.2 Unemployment Index:

According to ILO (ILO) The unemployed person is defined as an individual over a certain age who is unemployed, capable of and willing to work and searched for at a prevailing average wage but who does not find it. This indicator reflects the number of unemployed persons per 100 members of the workforce and their share of the total workforce in society. The unemployment rate in Iraq was 15%. In Babylon governorate, the unemployment rate was 13%, the male unemployment rate was 10% and the female unemployment rate was 32%. These ratios demonstrate the significant disparity in the size of employment between men and women for men and for all age groups in the province of Babylon.

3.1.3 Population Growth Index:

The relationship between population growth and sustainable development can be classified as reverse, as the higher the rate of population growth in a given country or geographical region, the higher the proportion of consumption of natural resources and unsustainable economic growth. The population growth rate in the province of Babylon in 2022 is 2.5%. If it continues to rise without planning and the inability of the Government to do its part, and the continued population increase with a decaying economic structure and underdevelopment of the productive sector will create crises and hamper sustainable development plans aimed primarily at channelling resources to meet the basic needs of the current and future populations.

3.1.4 Age Composition Index:

There is a close relationship between age structure and planning and sustainable development by creating a balance between available potentials and needs to be employed within a certain period of time, where the proportion of young people is (less than 15 years old) (37)% of the total population of Babylon governorate, while the average age group was this group (58)%. The third category, older persons (65) years and older, was 3% of the total population of the governorate, so the dependency rate was

64%. This indicates that indicators of population age composition are good and help to achieve sustainable development plans and goals in Babylon governorate.4

3.1.5 Quantitative Population Composition Index:

The study of this composition in any society leads to the clarification of the demographic features of the society male and female. The percentage of species in the governorate is 102 males per 100 females.

3.1.6 Population Environmental Composition Index: The importance of environmental composition and its results for development planning processes in attractive and expelling areas of the population is evident. The indicator and proportion of urban population (49)%, and the proportion of rural population (51)%. These ratios are distributed differently among the administrative units in Babylon governorate.

3.1.7 Fertility Index:

Birth and fertility are the means of population proliferation, and there are several economic, social, psychological and political factors contributing to the fertility rate. The birth rate of adolescent girls is 10-14 years of age and 15-19 years of age per 1,000 women of that age. The total fertility rate per woman in Babylon governorate is 3.8, the adolescent fertility rate for the group (15 _ 19) is 66.7 per 1,000 adolescents in Babylon. The total births in the governorate are 62,427, the proportion of births under supervision with competence (93.9 per cent) and the proportion of births with non-specialist supervision (6.1 per cent).

3.1.8 Mortality Index:

Mortality is an important element of population change and is one of the variables that affects the population's change in size and composition, especially age composition, as well as the lifetime rate. The crude mortality rate is a common measure of mortality acquisition, representing the result of dividing overall total mortality by the mid-year population multiplied by a thousand. Total total deaths in Babylon governorate (10,004) were male deaths (5,447), total female deaths (4,557), rough deaths per 1,000 male inhabitants (4.9), females (4.2) and rough deaths per 1,000 inhabitants (4.5).

3.1.9 Life expectancy indicator:

means the rate of years expected to be lived by a person if existing mortality trends are invested. An indicator is considered because a country's health achievement is calculated through life expectancy at birth and the number of deaths and children under the age of five or still in breastfeeding. The projected lifespan index in Babylon province at birth for males was 69. 1), females (73. 4 total duration has reached (71). 3), the expectation of life at the age of (60) years, male (18). 4) Wanath (20), total (19).

Table 1. Babylon Province's population indicators for 2022.

Indicators value	Indicators	T
11	Poverty rate index	1
13	Work percentage ratio	2
2.5	Percentage of population	3
37	A small percentage of the age group is less than 15 years	4
58	The average age group is (15-64) years	5
3	Age index percentage (65) years and over	6
64	Dependency ratio index	7

102	Specific composition ratio (species ratio)	8
49%	Percentage of urban population	9
51%	Percentage of rural population	10
62427	Fertility total index of total births	11
66.70	Percentage of women of childbearing age (15-49) years	12
3.8	Teenage fertility rate (15-19) years (births per 1,000 teenage girls)	13
(4.5) per thousand	Death rate per 1000 inhabitants	14
(4.9) per thousand	Growth rate for males per 1000 population	15
(4.2) per thousand	Rate of female population per 1000 population	16
Kidney (19.2) Males (18.4) Females (20)	Life expectancy indicators at the age of 60 years	17
Total (71.3) Males (69.1) Females (73.4)	Life expectancy	18

Source/Republic of Iraq, Ministry of Planning, Central Statistical Agency, Babylon Statistics Directorate, unpublished data, 2022.

Source/Republic of Iraq, Ministry of Health, Babylon Health Directorate, Life and Health Statistics Section, unpublished data, 2022.

3.2 Indicators of educational services.

Education is the fourth sustainable development goal. UNESCO defines education as a fundamental human right and an essential form of human development. Indicators of educational services can be demonstrated and clarified through educational planning standards. As follows:

3.2.1 Standards for kindergarten services.

Iraqi standard set special standard (child/kindergarten) (180) children per kindergarten, in Babylon governorate the indicator of this standard (159) child/kindergarten, the indicator (child/teacher) was reached in the governorate (28) Child/teacher, it exceeds Iraq's established standard (18) child/teacher, and reached the standard index (child/division) in the province (50) A child/division, it is much higher than the Iraqi standard specified (30) a child/kindergarten.

3.2.2 Standards for primary education services.

Select the Iraqi standard (25) pupil/teacher, the indicator of this standard has reached in the governorate (22) pupil/teacher, while (pupil/division) standard is defined by Iraqi standard (30) pupil/division, this indicator has been reached in the governorate (35) Student/Division, as for standard In all governorates, 411 pupils in each primary school are higher than the Iraqi standard of 360 pupils/schools.

3.2.3 Standards for secondary education services.

Set the Iraqi standard (20) student/teacher, while the indicator of this standard is in the governorate (20), while the index of this standard in the governorate (22) student/teacher, the student/division standard was defined by the Iraqi standard towards (30) Student/Division, in the governorate the indicator of this standard (42) Student/Division, while student/school standard has been set by Iraqi standard (540) students/schools, while in all governorates this indicator was 668 students per secondary school.

3.2.4 Standards for vocational education services.

Set the Iraqi standard (20) student/teacher, and the indicator of this standard in Babylon governorate (7) student per teacher, while the standard of student/division was reached throughout the governorate 20 students in each division, which is thus below Iraq's established standard (30) student in each division, while (student/school) standard has been set by Iraqi standard (540) student/school, the indicator of this standard (295) student/school, which is well below the adopted Iraqi standard.

3.2.5 Indicators of higher and technical education services.

Higher and technical education is one of the most important sources of social and cognitive development, well-being and economic development. The number of government colleges in Babylon governorate (21) faculty, (3) faculty, and (2) institutes. The number of students in colleges and institutes in the governorate (55,917) students. The number of teachers reached 1780.

Table (2) Educational indicators in Babil Governorate for the year 2022.

Deference	The reality of the situation	The value of the Iraqi index	Standard name	Educational stage	T
-10	28	18	Child /teacher	Kindergarten	1
+20	50	30	Child/div	Primary	
+ 21	159	180	Child/Kindergarten		
+3	22	25	Student/teacher	high school	2
-5	35	30	Student/Division		
-51	411	360	Student/school		
-2	22	20	Student/teacher	Professional	3
-12	42	30	Student/Div		
-128	668	540	School student		
+ 13	7	20	Student/teacher	Primary	4
+ 10	20	30	Student/Div		
+ 245	295	540	School student		

Source/Republic of Iraq, Ministry of Education, Babylon Education Directorate, Educational Planning Department, Statistics Division, Unpublished Data, 2022.

3.3 Health service indicators.

Health is one of the most influential community services in the field of development. It is one of the most prominent indicators of sustainable development and is essential in achieving its goals because it is linked to human work. Human enjoyment of the fundamental rights stipulated by the World Health Organization, She noted that health is safety and physical, mental and social adequacy. The number of hospitals in Babylon governorate is not just free of disease or disability. (19) Government Hospital, (5) Private, and (122) Health Center, while presenting the planning criteria for health services, and some other related indicators.

The current reality of health services can be divided according to the planning criteria in the study area, as these criteria demonstrate the extent to which they are needed, their actual existence, and their need according to population numbers and the specific criterion. Agencies:

3.3.1 criterion (population/hospital),

This criterion shows the ratio between the population of each hospital according to the Iraqi standard set (50000) person/hospital. the indicator of this measure in Babylon governorate (95,352) inhabitants per hospital, which exceeds the approved standard, thus the governorate needs (21) additional hospitals.

3.3.2 Criteria (population/health centre).

This criterion indicates the proportion of people per single centre. According to the standard of the Iraqi Ministry of Health, 1/10,000 people/health centre have been identified. In Babylon governorate, 18,757 people per health centre. The governorate needs 106 health centres.

3.3.3. standard (population/bed),

set the Iraqi standard (1/500) population/bed, and the indicator of this standard in the whole of Babylon governorate (736), i.e. the need of the governorate is estimated at about (1470) beds

3.3.4 standard (population/doctor),

defined by the Iraqi Ministry of Health standard (1/1000) population/doctor, the indicator of this standard in the governorate (1186) population/doctor, and the amount of the governorate's need is 360 doctor.

3.3.5 standard (population/dentist),

set the Iraqi standard (1/10000) population/dentist, the indicator of this standard in the governorate (12,172) population/doctor, i.e. need (100) dentist.

3.3.6 Criteria (population/pharmaceutical),

Defined by the Iraqi standard (1/20,000) population/pharmaceutical. This indicator in all governorates (1,469) is indicative of a surplus of 1,454 pharmaceuticals.

3.3.7 criteria (population/nurse),

set the Iraqi standard (1/250) population/nurse, and the indicator of this standard in the province (337) population/nurse, i.e. deficit and need by (2382) nurse.

3.3.8 criteria (population/health professionals),

set the standard of the Iraqi Ministry of Health (1/500) population/health. This indicator is 258 per health. This indicator indicates a surplus of 4,285 health professionals.

Table 3. Health indicators in Babylon province for 2022.

Reality	Iraqi standard	Standard	T
95352	1/50000	Population / hospital	1
18757	1 / 10000	Population / Health Center	2
736	1 / 500	Population/bed	3
1186	1 / 1000	Population/the doctor	4
12172	1 / 10000	Population / Dentist	5

145	1 / 20000	Population/Pharmacist	6
337	1 / 250	Population/Nurse	7
258	1 / 500	Population/Health Professions	8

Source/Republic of Iraq, Ministry of Health, Babylon Health Directorate, Health and Life Statistics Division, unpublished data, 2022.

* The local realistic standard was extracted by dividing the population by the number of facilities, health centers, doctor, dentist, pharmacist, nurse, health professions.

Table (4) Amount of need, deficit or surplus for health sector services in Babylon Province for 2022.

Surplus or deficit	Reality	Amount needed	Standard	T
21	24	45	Population / Hospital	1
106	122	288	Population / Health Center	2
1470	3106	4576	Population/bed	3
360	1928	2288	Population/the doctor	4
100	188	288	Population / Dentist	5
-1454	1568	114	Population/Pharmacist	6
-4285	8861	4576	Population/Health Professions	7
2328	6671	9153	Population / Nursing Professions	8

Source/based on table (3).

* The need has been extracted by dividing the population by the specified criterion.

* The deficit or surplus was extracted by subtracting existing centres from the actual need

Table 5. Health indicators in sustainable development in Babylon province for 2022

Indicator value	Indicators	T
33.9	Maternal mortality rate per 100,000 live births	1
39.9	Mortality rate in the presence of skilled health professionals	2
24.1	Mortality rate of children under the age of five per 1,000 live births	3
15.1	Neonatal mortality rate per 1000 births	4
From (15-49) years old (80)%	The number of cases of immunodeficiency disease per 1,000 of the uninfected population, according to sex and age	5
From (50) years and	The incidence of immunodeficiency	6

over (20)%	per 100,000 population	
0.27	Rate of tuberculosis infections per 1,000 inhabitants	7
14	Malaria infections per 1,000 inhabitants	8
zero%	Hepatitis C infections per 10,000 population	9
4.30%	Mortality rate attributable to cardiovascular disease, cancer, diabetes, and chronic respiratory diseases	10
2.6	Rate of deaths due to suicide per 100,000 population	11
(1.3)% of them (21) suicide cases were males and (7) females	Number of patients referred for alcohol addiction	12
378	Number of patients suffering from alcoholism	13
116	Death rate due to traffic accidents per 100,000 population	14
10.2	Number of deaths in traffic accidents	15
228	Percentage of women of reproductive age, aged between (15-49) years, who have the need for family planning using modern methods	16
66.7	Birth rate of adolescent girls aged between (10-14) years and (15-19) years per 1000 women in that age group	17
3.8	Mortality rate attributed to unintentional poisoning	18
0.09	Number of traffic accidents	19
Number (8403) rate (37.7)	Falling from a high place	20
Number (3621) rate (16.2)	Assaults with gunshots	21
Number (805) Rate (3.6)	Assaults with a sharp object	22
Number (836) Rate (3.7)	Sexual assault	23
Number (zero) rate (0.0)	Assaults or other incidents	24

Source/Republic of Iraq, Ministry of Health, Babylon Health Service, Health and Life Statistics Department, Unpublished Data, 2022.

Results. (conclusion)

After completing the research and after analysing the results, the researcher found that the conclusion of this research proved that there was no balance between the population and the social development indicators in the province. Where there is a decrease or deficit in some indicators of sustainable development in education and health, This is due to the population's high size and poor service efficiency. We can summarize the main findings and indicators of the research as follows:

1. Population indicators show that the population growth rate is high in the province of Babylon, where it is 2.6. The proportion of the urban population is 49% and the proportion of the rural population (51%). The proportion of the economically active population, which is 15-64 years old, represents the largest proportion of the population. 68%, the dependency rate was 64%, while the type ratio was 102 male per female. All these indicators affect in one way or another the various human and economic potentials in the governorate and the governorate's possession of some of these potentials helps to create sustainable economic and social development in the governorate.

2. This research has shown that there is a discrepancy in the reality of the indicators of sustainable development in the educational services sector. This can be illustrated by the following criteria, where the difference between the reality of education in the governorate and the Iraqi standard set for all educational stages is as high as the indicator of a standard. (child/teacher) (-10), difference index of (child/division) up to (-20) and standard indicator of (child/kindergarten) up to (+ 2). At the primary level, the difference (deficit or surplus) between the reality of the governorate and the Iraqi criterion was as high as the standard (pupil/teacher) (+ 3), the criterion index (pupil/division) was -5 and the criterion indicator (pupil/school) was (-15). At the secondary level, the difference between the (student/teacher) criterion (-2), the (student/division) criterion (-12) and the (student/school) criterion index was (-128). Finally, the difference in vocational education has reached a standard indicator. (student/teacher) (+ 13), indicator standard (student/division) reached (+ 10), benchmark indicator (student/school) has reached (+ 245). They are different in their efficiency and the nature of their distribution and performance, i.e. there are deficits in some and surplus in others, which requires the development of a balanced education sector development plan and achieving sustainable and inclusive development in education.

3. Through the health indicators presented, the researcher noted that there was a deficit in the efficiency of the health services provided to the population in Babylon governorate in general, a shortage of health personnel and health institutions, as well as a deficit in medical supplies, and an imbalance in the distribution of these institutions between the administrative units of the governorate, where the number of government hospitals reached (19) Hospital, number of private hospitals (5) Hospital, number of health centres 122 non-governorate centres, requiring more hospitals and health centres, and increasing medical and health personnel in Babylon governorate.

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