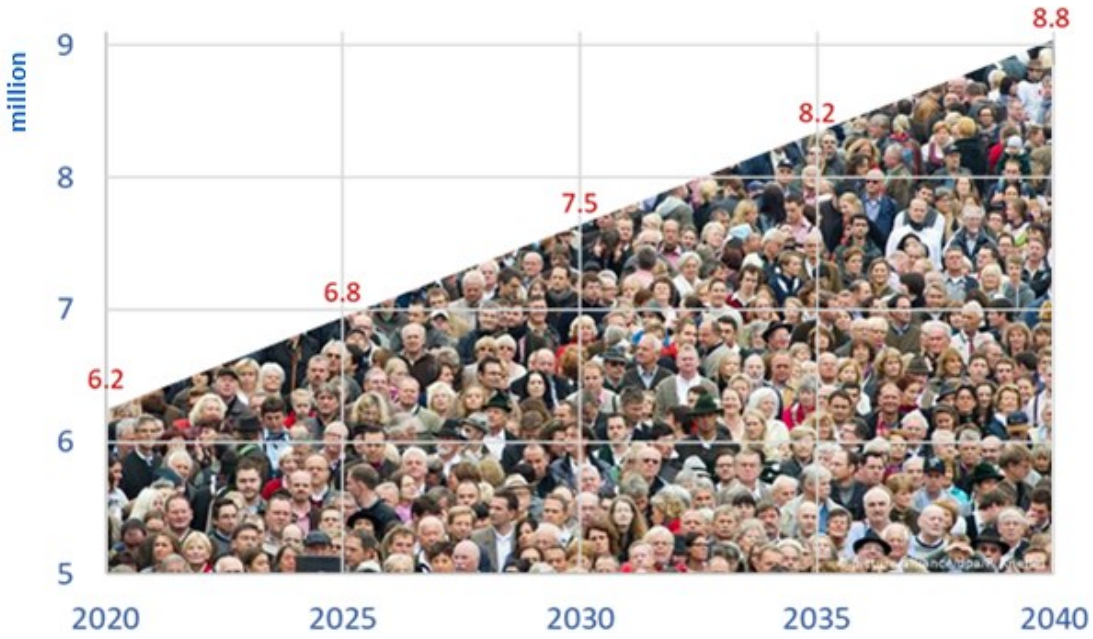
Kurdistan Region of Iraq

Population Analysis Report



Dr. Magued Osman

The CEO and Director of the Egyptian Center for Public Opinion Research “Baseera”

February 2021

Preface:

On 22 June 2021, at a special ceremony, we launched a summary of population dynamics of Kurdistan Region, prepared by our Ministry in cooperation with UNFPA. After the report is completed, we are pleased to present the report with more details and information. As always, the Ministry of Planning works in collaboration with international organizations to obtain different data and indicators so that government ministries can use them to develop the necessary plans and strategies in the event of rapid changes in our society due to the successive crises we have faced over the past eight years, and these changes hold us responsible for reorganizing our work in a way that We can take advantage of the most important wealth, which is Human capital in Kurdistan region, and raise the level of our ability to face fluctuations now and in the future.

Accordingly, the Statistics office, in collaboration with UNFPA, considered it important to work together to prepare this report, especially because we need to know the dynamics of the population eight years after the beginning of the humanitarian crisis with the arrival of refugees and IDPs to the region due to the deteriorating security situation and the displacement of some 1,100,000 million people after 2014 and the impact of this displacement on the infrastructure in the provinces of Iraq affected by the war against the terrorist organization ISIS, which has made 700,000 Iraqi citizens decide not return to their provinces till now according to available statistics in addition to the presence of about 266,000 refugees.

Eighteen years after the fall of the former regime, Iraq was unable to carry out the census that was necessary and important after the last census of 1987, which is why our ministry, and the international organizations are taking further steps to collect new data through statistical surveys and try to organize the data obtained in a way that reflects the current situation of the region.

This report contains the most important demographic indicators and will certainly be much benefited from because it focused on the demographic developments expected in the Kurdistan region over the next 20 years based on the expected course of changes from 2009 onwards.

That year, an operation was carried out which was listing and numbering which showed that the population of Kurdistan Region was 4,662,000 people, then in 2013, We have prepared a report to estimate population until 2020 in more details in terms of HH size, annual population growth and gender structure that become our source to plan for projects and related policies. In the absence of new data through the census as mentioned, and the need to map the population dynamics for two decades until 2040 and renew our expectations according to the changes that It's probably going to

happen, this report should be used as the basis for our future work and is an important achievement.

In this report, we tried to highlight the following points:

1) Estimate the number of populations for the next two decades 2020-2030-2040.
2) Changes expected to affect the population pyramid of age groups in the 20 years.
3) The impact of population dynamics on the Sustainable Development Goals by 2030.
4) Expected number of births and deaths.
5) Economic impacts, particularly in the areas of health, social status and education.
6) Changes in the size of the workforce in the working age group between the ages of 15 and 64 in accordance with international standards.
7) Changes to the 5-17 age group from enrolling in school to the end of secondary education.
8) In the end, recommendations were made based on the report's findings.

The release of the report is not the end, but it will be the beginning of our work to use these results both by the Ministry of Planning and the ministries and authorities of the Government of Kurdistan region because its closely linked to most of them and it is no secret if I say that the future of the Kurdistan region in the next two decades is linked to our level of understanding of the challenges we face due to the dynamics of the population and how to benefit from these Data and indicators in the development of our plans and programs so that we can benefit from human capital, especially the demographic window, because it is an opportunity to be realized for each country once.

We have a lot of work to do to translate the results into plans and programs, and the Ministry of Planning is always ready to make the most of this report to implement the recommendations it has made.

Finally, I would like to thank UNFPA for its assistance in conducting very useful and important survey over the past 10 years with Kurdistan Region statistics office and to develop an annual program, which we highly value. Also, I would like to thank the president of Kurdistan region statistics office and his employees for working on and preparing of this report. Special thanks to Dr. Majid Othman on his work with us from Egypt.

Dr. Dara Rasheed
Minister of Planning
2021

Preamble

Knowing the state of the population is essential for each government for proper planning. Without knowing the population and their characteristics in terms of age groups, gender structure, distribution on administrative units, density, etc., short, medium, and long-term plans cannot be developed.

After the Iraqi government's efforts to conduct the 2010 census faltered, it was considered important for the statistical team to prepare a report on population and demographic characteristics so that an estimated population figures could be provided until at least 2020. In 2017, the Kurdistan region statistics office conducted a major survey in collaboration with the International Organization for Migration (IOM) and the United Nations Population Fund (UNFPA), resulting in a detailed demographic report that was accessible to government and non-governmental institutions in April 2018 and is now an important source of data and demographic indicators throughout the Kurdistan region.

At the beginning of 2021, after the census was postponed again, the Kurdistan Regional Statistics Office, in collaboration with UNFPA, prepared a report on population dynamics till 2040, based on the numbers and data of new surveys and surveys conducted in Kurdistan Region in the years 2017 to 2019.

This report will not be a substitute for the census but will be the basis for the development of plans and programs if the census is not conducted and the content of this report can be updated when new data sources are available through surveys and statistical data collection.

All efforts of the Kurdistan Regional Statistics Office are focused on enabling the Ministry of Planning to make this report and other reports the basis for the preparation of population policy, which is one of the most important documents that need to be prepared, and KRG needs to consider at the highest level the preparation of population policy document to be the basis for the development of all plans in the field of economics, Health, education, social status and housing.

Here we should mention that this report is prepared on the level of three governorates of Erbil, Sulaimaniyah and Duhok and does not include Halabja governorate. The reason is that this report is prepared based on the results of the surveys and statistical works of the past and all of them are implemented on the level of these three governorates. Because of this, data and indicators cannot be shown on the level of four governorates. To consider Halabja as an independent governorate in this type of statistical reports, Halabja should be treated independently in several important and fundamental surveys as a governorate and this needs time. This year, both Labor Force and SWIFT surveys will be implemented on the level of four governorates.

On this occasion, I would like to thank the departments of the Statistics office, especially the Department of Population and Labor Force Statistics, for their participation in the preparation of this report, as well as Mr. Majid Othman, who contributed to the analysis of the data and the presentation of the results.

Serwan Mohamed
President of Statistics Office
2021

Kurdistan Region of Iraq

Population Analysis Report

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Forward

Iraq has witnessed accumulative crisis since 2014 resulting in shifts on the demographic profile of the country. There have been major changes on key population factors including population growth, distribution, age structure (including women in reproductive age, youth and adolescents), fertility, mortality, population movements, women empowerment etc. In addition, the more recent COVID19 made even more implications on the demographic factors.

The report on population analysis of Kurdistan Region of Iraq aims at providing a comprehensive population analysis and analyzing the impact of population dynamics on sustainable development.

The analysis addresses the population size, trend, characteristics and dynamics, including internal displacement and refugees. The link between population dynamics, human capital and sustainable development is explored and population projections are conducted for the period 2020 to 2040. A set of recommendations were developed based on the analysis to inform policy makers on the implementations of population dynamics on economic and social development.

1. Introduction

1.1 Political and administrative outlook

The Kurdistan Region of the Republic of Iraq (KRI) is a constitutionally recognized semiautonomous region in northern Iraq. Its government (the KRG), based in Erbil, has the right, under the Iraqi constitution of 2005, to exercise legislative, executive, and judicial powers according to the constitution, except in what is listed as exclusive powers of the federal authorities[1]. The region consists of three governorates: Erbil, Sulaymaniyah and Duhok.

Erbil Governorate hosts the capital of the Kurdistan Region of Iraq. The governorate, like the rest of the Kurdistan Region, has been deeply affected by recent waves of displacement resulting from the conflicts in Syria and the rest of Iraq, as well as a pervasive financial crisis affecting the public and private sectors of its economy. Due to the economic opportunities in Erbil Governorate, it hosted Syrian refugees and displaced people fleeing conflict in Syria and insurgency in other parts of Iraq.

The Sulaymaniyah Governorate lies at the eastern side of the Kurdistan Region of Iraq, bordering with Iran. The southern part of the governorate comprises the Garmian Administration (the districts of Kalar and Kifri and a part of Khanaqeen which originally belongs to Diyala governorate). Since 2012, Sulaymaniyah has gradually received Syrian refugees that were moving from their displacement in the Duhok and Erbil Governorates. Since 2003, families displaced from the neighboring central governorates of Kirkuk, Salahaddin, and Diyala have also sought shelter in Sulaymaniyah's districts, however, Duhok hosts most of the IDP's and refugees.

The Duhok Governorate lies at the western side of the Kurdistan Region of Iraq, bordering with Turkey and Syria. It is the main entry door by road of both people and goods from these two countries. It also borders the Mosul Lake, which separates the Nineveh Governorate from Duhok. This geographic position has placed the Duhok Governorate as the principal shelter for Syrian refugees fleeing the conflict in the northern areas of Syria in 2012, as well as for families displaced after the fall of Mosul, Nineveh, in June 2014. In August 2014, after the fall of Sinjar, Duhok received large numbers of Yezidi IDPs, often fleeing and transiting through the Sinjar Mountains and Syria, before settling in the Duhok Governorate.

[1] https://www.worldbank.org/en/topic/macroeconomics/publication/the-kurdistan-region-of-iraq-assessing-the-economic-and-social-impact-of-the-syrian-conflict-and-isis

1.2 Economic outlook[2].

The long-term conflict in Iraq has negatively impacted the economic outlook for the country, including the Kurdistan Region, as foreign investment has decreased, and trade routes have been disrupted. During the last decade, KRI faced additional challenges including inflow of Syrian refugees, displacement due to the ISIL invasion of Iraqi territories, budget disputes between the KRG and Iraq's Federal Government and decreasing oil prices.

These challenges had a negative impact on government function, household resilience, private sector survival, and distortion of the labor market in the Kurdistan Region of Iraq. Furthermore, they put the region's government under immense strain, particularly with respect to the provision of public services and social protection. With all these challenges, KRI was faced with an unexpected global pandemic that placed more pressures not only on the health sector but also on the economy at large.

1.3 Population policy and institutional framework

KRI government is considering establishing a population council. To oversight the multi-disciplinary population issues. Experience of other countries in establishing similar machinery indicate that a carefully designed platform can be successful in achieving the goals. The success of the population council depends on several key critical factors, including:

1) Developing a vision that is comprehensive, participatory, and compatible with the sustainable development strategy.
2) The composition of the council must be inclusive of all stakeholders without losing its efficiency.
3) The structure of the council should reflect a clear identification of responsibilities and accountability mechanism.
4) A strong monitoring and evaluation system should be designed as an integral part of the council.

A population policy for KRI will be important to guide sustainable development. Such policy should consider a wider scope that embraces quality of life while addressing population growth, reproductive health, urbanization, and population characteristics. It should as well address needs and aspirations of youth, women and girls, aging population, and internally displaced individuals and refugees. The policy should be evidence based and should benefit from rigorous research conducted on demographic transition and demographic dividend.

[2] Sindi, A. (2017). Economic Diversification and Reconstruction. In: Iraqi Kurdistan Region A Path Forward (Chapter 12). Sasha Toperich, Tea Ivanovic, Nahro Zagros. Editors. Johns Hopkins University.

2. Population size, trend, characteristics, and dynamics

2.1 Population estimates and trends[3]

The population of Kurdistan Region of Iraq (KRI) is estimated as nearly 6.2 million individuals[4] in 2020. It represents 15.3 % of the Iraqi population estimated as 40.2 million individuals[5]. Earlier censuses indicate that the KRI population was 900 thousand in 1965, 2 million in 1987, 2.9 million in 1997, and 5.1 million in 2014.

Table (2.1) Population estimates of KRI.

Year	KRI population	Iraq population	% KRI to Iraq	Source
1965	902,000	8,000,000	11.3	Census
1987	2,015,466	16,335,000	12.3	Census
1997	2,861,701	22,046,244	13.0	Census[6]
2014	5,332,600	36,004,552	14.8	Projections
2020	6,171,083	40,223,000	15.3	Projections

The KRI population is distributed among three governorates: Erbil, Duhok and Sulaymaniyah. Sulaymaniyah is the largest governorate hosting nearly 2.27 million, followed by Erbil (2.25 million), then Duhok 1.65 million inhabitants. The three governorates represent 36.8%, 36.5% and 26.7% respectively of the total population of KRI. The majority of KRI population (81.6%) lives in urban areas, the percent of population living in urban agglomerates is 83% in Erbil, 74% in Duhok and 85% in Sulaymaniyah[7]. High urbanization rate is attributed to economic development and to political turmoil including the Iran-Iraq war, the Gulf war, and the change of the political system in 2003.

[3] Estimates might differ from one source to another due to the use of different administrative boarders. For example, there are some areas in Duhok governorate that officially belong to Ninawa governorate but KRI is governing them. They are Shekhan center and Zilkan sub-districts in Shekhan district and Faida sub-district in Semel district. Iraqi government counts their population with the total population of Ninawa governorate, while KRI added their population into the population of KRI as it governs those areas.

[4] KSRO (2014). Population Projections for KRI (2009-2020).

[5] UN (2019) World Population Prospects 2019.

[6] The reported figure for KRI is an estimate as the census was not conducted in KRI.

[7] Source: Population projection calculated according to numbering & listing results 2009 published in: Central Statistical Organization of Iraq. Statistical Yearbook 2018/2019, Table 2/6A. http://cosit.gov.iq/ar/2018-2019. Detailed demographic data can be found in: Kurdistan Statistical Organization, IOM and UNFPA (2018). Demographic Survey Kurdistan Region of Iraq. http://krso.net/files/articles/080519013929.pdf

2.2 Age and sex structure

The population pyramid of KRI is reflecting a young population as the pyramid shows a wide base (Figure 2.1). As illustrated in Figure 2.2, nearly 35% of the total population are below 15 and 28% are between 15 and 29, an indication of a young age structure. The age groups 30 to 44 and 45 to 59 accounts for nearly 20% and 10% respectively. Older cohort 65+ accounts for 4.3%.

The age dependency ratio is 63.5%, i.e., for every 1000 individuals in the age group 15 to 64 there are 635 individuals below 15 years or 65 years old and above. The high percent of population in the working age might suggest that KRI will benefit from a demographic gift as the working age group population is high. However, the duration of this period is linked to many factors (fertility rate, health, and migration). The ability of KRI to benefit from a demographic gift depends heavily on investing in human capital especially the quality of education and training offered to the labor force.

The demographic dependency ratio does not mean economic dependency as not all individuals in the age group 15 to 64 are necessarily working. This is especially true for students and for housewives. The age structure is similar across the three governorates, with Duhok having a slightly larger percent of young age individuals as indicated in Table 2.2.

Figuer 2.1: KRI Population pyramid, 2017

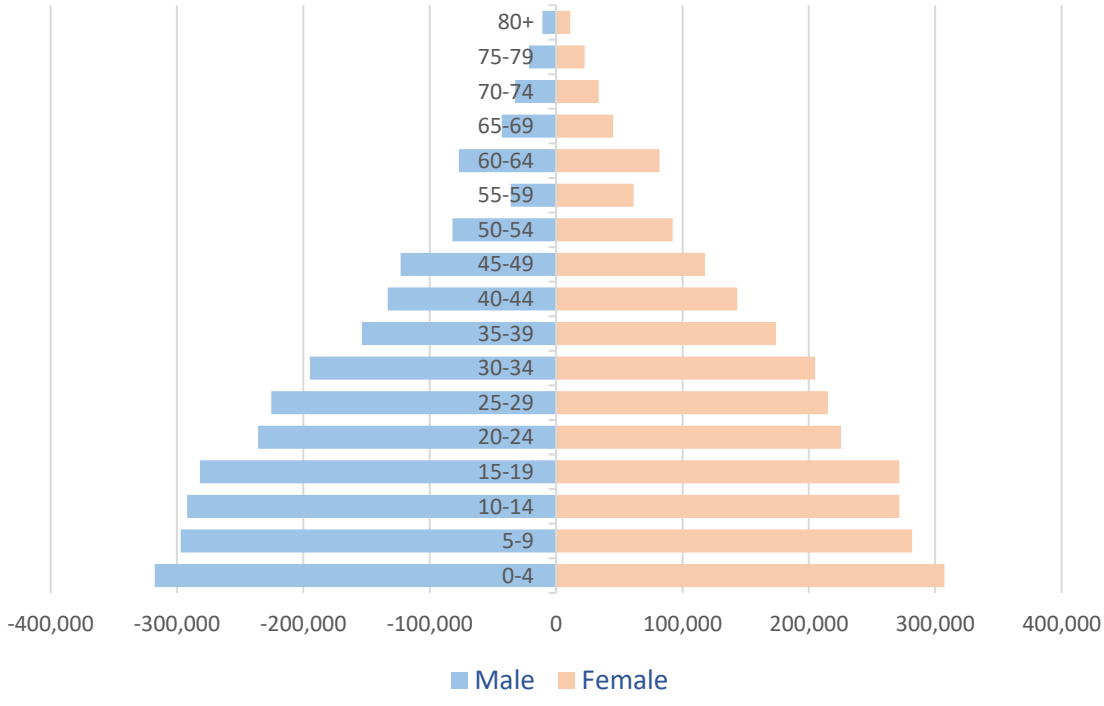


Figure 2.2: Age distribution, KRI 2017

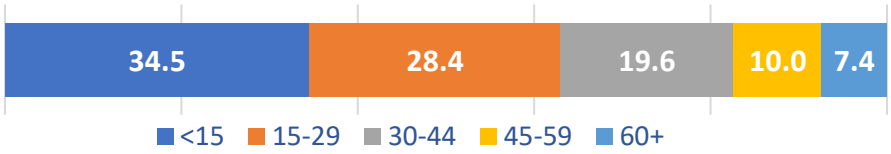


Table (2.2) Age and sex percent distribution by governorate and place of residence, 2017.

		0-14	15-29	30-44	45-59	60+	Total*
Erbil	Male	18.3	14.5	9.3	4.8	3.3	50.2
	Female	17.1	14	10	5.4	3.5	50
Duhok	Male	19.2	15.5	8.6	4.1	2.9	50.3
	Female	18.4	14.8	9.4	4.5	2.9	50
Sulaymaniyah	Male	16.3	14	10.1	5.2	4.2	49.8
	Female	15.6	13.4	10.9	5.7	4.5	50.1
Urban	Male	17.5	14.3	9.7	5	3.1	49.6
	Female	16.5	13.9	10.4	5.5	3.9	50.2
Rural	Male	18.9	15.2	8.1	4	3.4	49.6
	Female	18.3	14.5	9.4	4.6	3.4	50.2

*Totals do not add up to 100% due to rounding.

Source: KSRO (2018)

2.3 Household size and composition

The average household size in KRI was 5.1 per household[8] in 2017. This figure is lower than the corresponding figure (6.2 per household) calculated from the results of the last census conducted in 1987. The change in household size was larger in Erbil (6.4 to 5.1 per household) and Sulaymaniyah (5.8 to 4.6 per household) while the decrease in Duhok was from 7 to 6.2 per household.

As previously mentioned, the average household size for non-camp KRI was 5.1 per household in 2017. This figure includes host communities as well as IDPs who tend to live in larger households (5.9 per household). The average size of households of IDPs living in camps is even larger reaching 6.5 per household.

For non-camp KRI, the average household size varies by governorate with larger households in Duhok (6.2 per household) vs. 5.1 per household and 4.6 per household in Erbil and Sulaymaniyah respectively. Household size varies according to place of residence, as households are more likely to be larger in rural areas (5.6 per household vs. 5.0 per household in urban areas). Characteristics of the head of the household

[8] For non-camp households.

have an impact on its size. Households tend to be higher when its head is male, older, currently married, or less educated.

Nearly one out of ten KRI households are headed by women. Female headed households are more prevalent in urban areas (11% vs. 8% in rural areas) and more prevalent in Erbil (11%) and Sulaymaniyah (11%) compared to Duhok (8%). Widowhood is playing a role in increasing the percent of female headed households, as the percent of widows increase with age to reach 94% among women 65+. Few females headed households when heads are below the age 45 (<4%), the prevalence increase with age to reach 10% when the head of the household is 45- to 54-year-old, and to 27% when the head of the household is 65+. Female headed households are smaller than male headed households. Data indicated that among households of size 1, the percent of female headed households is 84%, the higher the size of the household the less likely it is headed by a female. Among households with 2 members, the percent of FHH is 22% and among households with 3+ members the percent of FHH is 7%. Analysis of female headed households is important for social protection and poverty alleviation program as these households are poorer than male headed households. The survey showed that female headed households are more prevalent among IDPs, especially for camp IDP's (14%) due to higher mortality experienced by displaced male population.

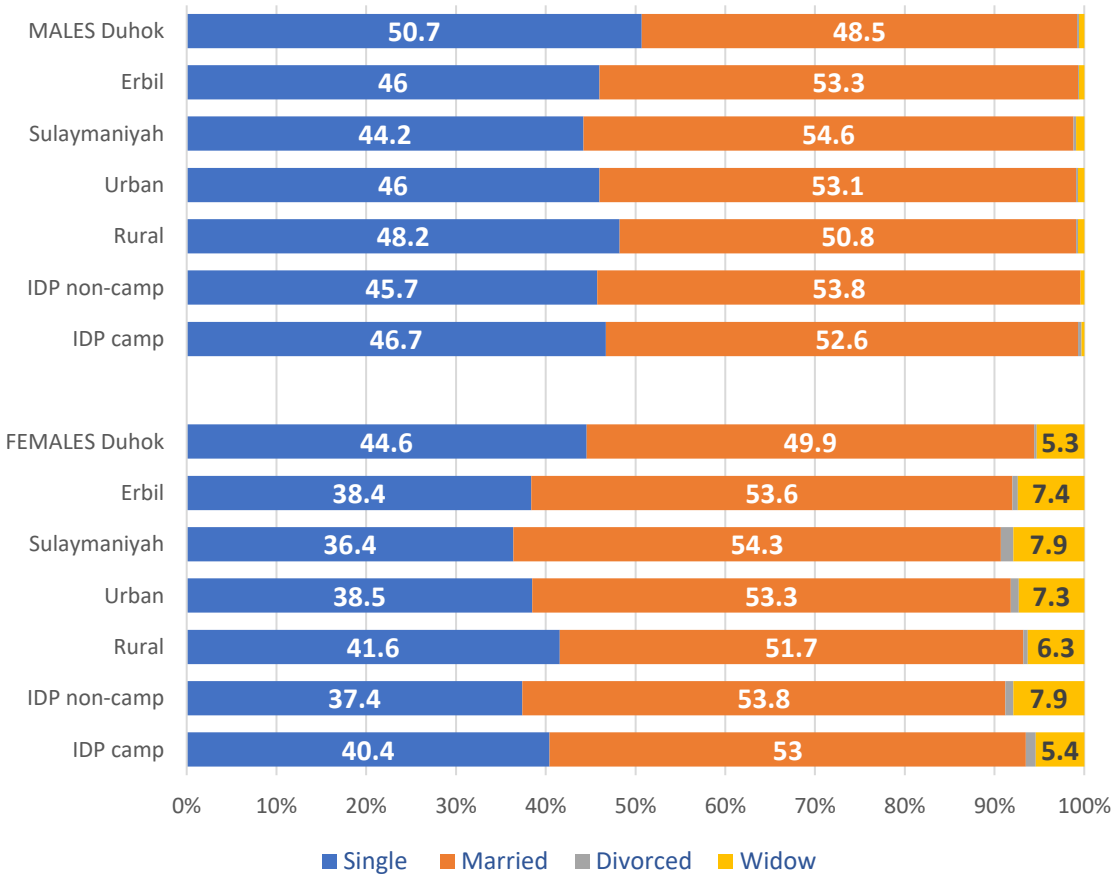
2.4 Marital status

According to the Demographic Survey 2017, more than half (53%) of the non-camp population 15 years or above are married. Celibacy is more prevalent among males as 46% of males vs. 39% of females are single. On the other hand, widowhood is more prevalent among females (7.1% versus 0.7% for males). Marital dissolution is uncommon as only 1% of females and 0.2% of males are either divorced or separated. Celibacy varies across governorates with Dohuk having a higher celibacy rate of 51% among males and 45% among females. As illustrated in Figure (2.3), celibacy is less prevalent in Erbil and in Sulaymaniyah for both sexes. When IDPs were segmented according to type of residence (cam vs. non-camp), the survey showed that celibacy is slightly higher among cam IDPs.

Early marriage, measured by the percent of ever married among girls below 18, was nearly 6% for female non-camp population of KRI. Little variation in early marriage existed across governorates or between urban and rural. However, a significantly higher prevalence existed among IDPs, as the percent of girls below 18-year-old who ever-married was four folds the percent among host community. As illustrated in Figure (2.4), early marriage among IDPs is more prevalent among non-camp individual (24%) when compared to camp individuals (16%).

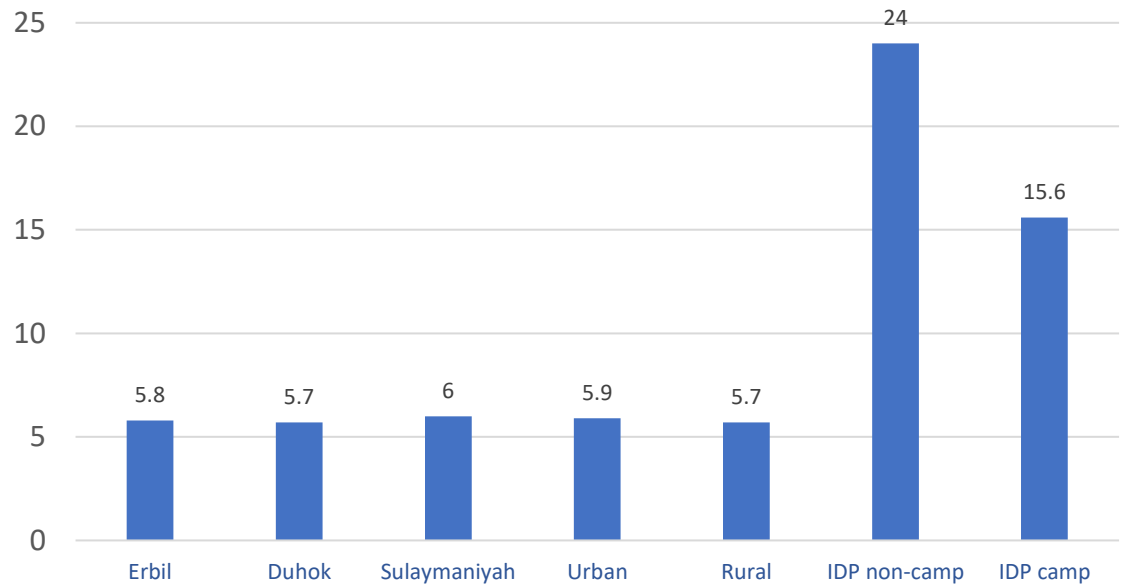
Widowhood increase with age among females. For the non-camp population, it is increasing from 10% among females 45 to 54 years old to 26% among females 55 to 64 years old. More than half (56%) of women 65+ live in a state of widowhood. The percent is even higher among IDPs, as it reached 63% for camp IDPs and 72% for non-camp IDPs. This segment should be considered in social protection programs as they might be the most fragile segment of the society.

Figure 2.3 Marital status 15+, 2017



Source: Calculated from KSRO (2018).

Figure 2.4 Percent ever married females 15-17, 2017



Source: Calculated from KSRO (2018).

2.5 Fertility

The level of fertility in KRI measured by the total fertility rate (TFR) in 2018 was 3.1 children per woman, showing a decrease from the fertility level observed in 2011 which was 3.3 children per woman[9]. A slightly lower figure was observed in the 2017 KRI Demographic Survey[10], which estimated the TFR at 3.0 children per woman. These figures show that the fertility level in KRI is lower than the entire country where the TFR was 3.6 children per woman.

Analyzing fertility by age of mother indicates that the age specific fertility rates is low among teenagers (26 children per 1000 women) and then rises to 99 children per 1000 women among the age group 20-24 then to 157 children per 1000 women among the age group 25-29 and kept the same level among the age group 30-34 before declining to 109 children per 1000 women, 46 children per 1000 women and 9 children per 1000 women for the age groups 35-39, 40-44 and 45-49 respectively.

Mother education is a determinant of fertility level. However, fertility behavior changes only when females had a secondary education. The difference in TFR between mothers with no degree and those with primary, intermediate or basic education is minimal (3.3 vs. 3.2 children per 1000 women) whereas the TFR among mothers with secondary education and above is 2.5 children per 1000 women. To make sure that these differences is not due to age effect, (i.e., highly

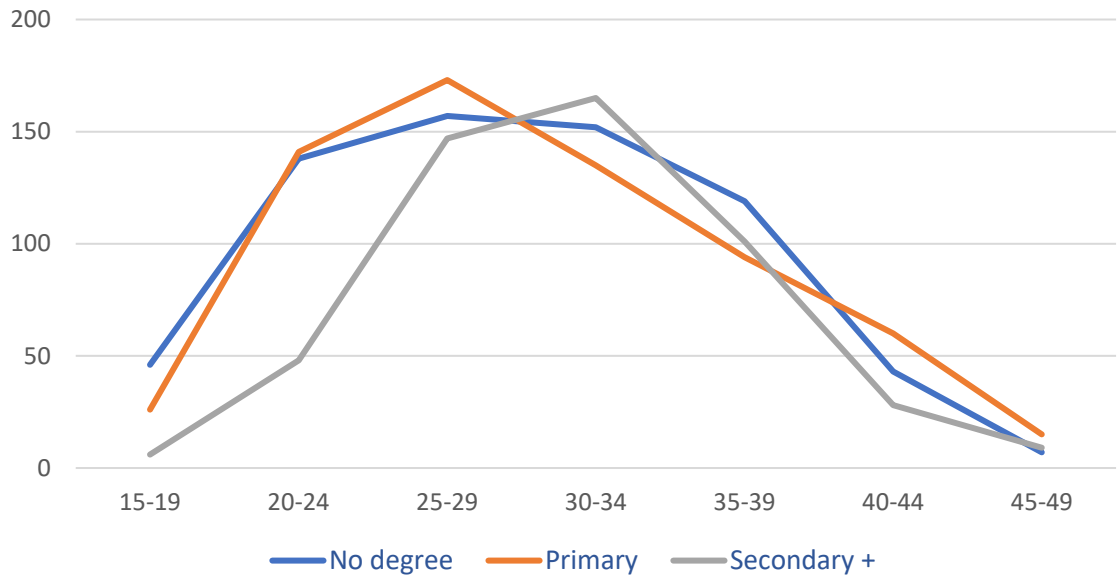
[9] UNICEF (2018) MICS Survey.
[10] KSRO (2018).

educated women might be younger and then are likely to give more births in the future) the age specific fertility rates (ASFR) are compared by mother's education. As illustrated in Figure (2.4), the fertility level at different age groups differs when the mother had a secondary education or above. This group is more likely to delay childbearing as the ASFR for the two age groups 15-19 and 20-24 are 6 children per 1000 women and 48 children per 1000 women compared to 46 children per 1000 women and 138 children per 1000 women for mothers with no formal education. ASFR peaks at the age group 30-34 for the highly educated mothers while it reached its maximum for the less educated mothers when they are five years younger.

The average number of children ever born in KRI was 4.4 while the average number of children living is 4[11]. As shown in Figure (2.5), both measures are higher in Duhok Governorate (4.9 children ever born and 4.6 children living), in rural areas (4.9 children ever born and 4.5 children living). Among IDPs, camp population has a higher average child ever born (4.6 children) and a higher average of children living (4.2 children). As illustrated in Figure (2.6), the average number of children ever born, or living are both inversely related with education. The average number of children for mothers with no formal education is more than twice the average number of children for mothers with secondary education or above. Age of mother is related to the average number of children ever born or living, as mothers get older, they are likely to have more siblings. In other words, the measures for younger mothers indicate incomplete fertility history as women have not yet completed the whole cycle of reproductive life. On the other hand, the average number of children for older cohorts does not necessarily reflect current fertility levels as it includes the experience of a real cohort of mothers' outcome of their fertility history as they move from the age, they started childbearing.

[11] KSRO (2018).

Figure 2.4 Age specific fertility rates by education level, 2017



The survey showed a similar analogy between marriage and fertility as both are nearly universal. Universal marriage is suggested since the percent of celibacy among women 55+ is around 3%, and universal childbearing among ever married is supported by the fact that percent of childless females is 5%.

Figure 2.5 Average number of children ever born and living children, 2017

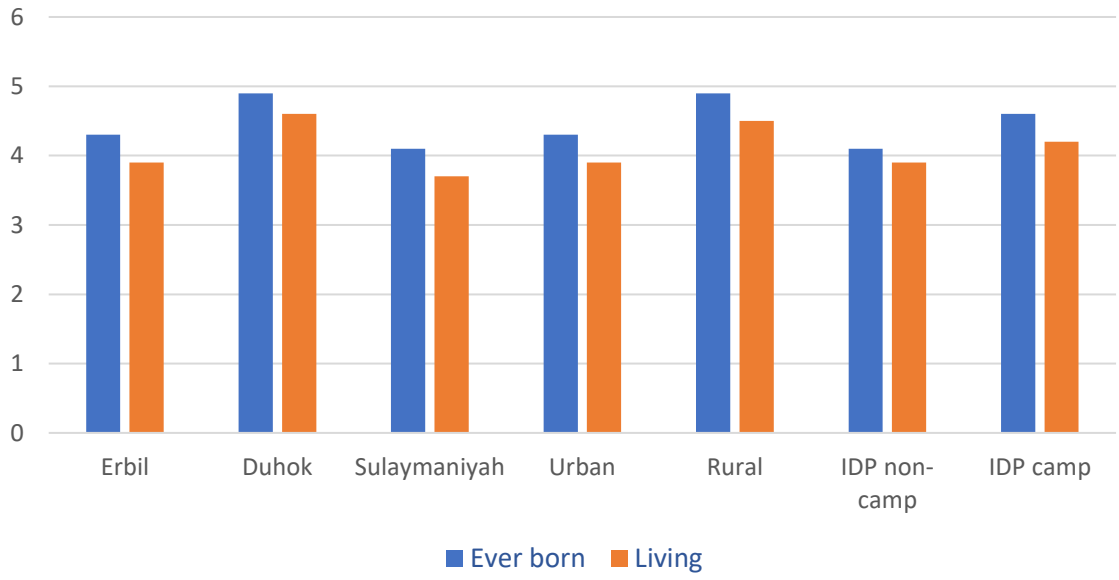
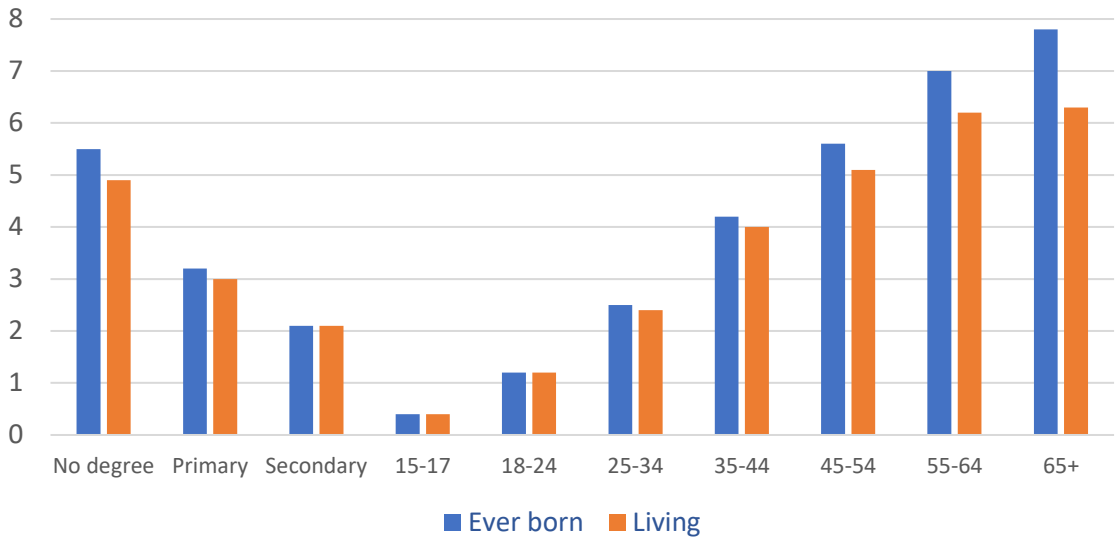


Figure 2.6 Average number of children ever born and living children by mother's age and education level, 2017



2.6 Family planning

Appropriate contraceptive use is important to the health of women and children as it allows extending the period between births and limiting the total number of children. According to the MICS Survey, the percent of current use of contraceptives for women who are currently married is 66.6% in KRI. It should be noted however, that married women depend heavily on non-modern contraceptive method, as the percent using modern method is only 25.6%. The use of modern contraceptives does not differ across governorates, but the use of all methods does. The level of using any method is 73.4% in Sulaymaniyah, 66.1% in Erbil and 56.9% in Duhok.

Pattern of contraception use differs in KRI than other regions of Iraq. KRI has a higher contraceptive use (66.6% vs. 52.8 for Iraq) when all methods are considered but a lower contraceptive use (25.6% vs. 36.1% for Iraq) when only modern methods are considered. The method mix differ as well. In KRI the most prevalent modern method is IUD (10.7%) followed by pills (6.3%) then male condom (4.6%). On the other hand, the average use in Iraq place pills as the main modern method (16%) followed by IUD (8.8%) then injectables (3.9%).

The survey assessed the level of unmet need for contraception[12] either for spacing or for limiting. The standard definition of unmet need for family planning includes women who are fecund and sexually active but are not using any method of

[12] unmet need for contraception refers to fecund women who are not using any method of contraception, but who wish to postpone the next birth (spacing) or who wish to stop childbearing altogether (limiting).

contraception, and report not wanting any more children or wanting to delay the birth of their next child for at least two years. Included are:

a) All pregnant women whose pregnancies were unwanted or mistimed at the time of conception.
b) All postpartum amenorrhoeic women who are not using family planning and whose last birth was unwanted or mistimed.
c) All fecund women who are neither pregnant nor postpartum amenorrhoeic, and who either do not want any more children (want to limit family size), or who wish to postpone the birth of a child for at least two years or do not know when or if they want another child (want to space births) but are not using any contraceptive method.

The level of unmet need was 8% in KRI. Unmet need was higher in Duhok (10%) and lower in Erbil (7%) with Sulaymaniyah in the middle with 8%. Thirty nine percent of unmet needs was for spacing between births and sixty one percent for limiting the number of children. Unmet need in KRI is lower than the average of the country which is as high as 14.3%.

2.7 Mortality

In 2018, under-5 mortality rate in KRI was 17 per 1,000 live births, which indicates that mortality level is lower than other parts of Iraq. The estimated rate was 28 per 1,000 live births in south/central region and 37 per 1,000 live births in Iraq. These figures are significantly lower than the 2011 figures, as the estimated rate in KRI was 32 per 1,000 live births. Most of deaths occurring among children took place in their first year of life. The infant mortality rate is 15 per 1,000 live births. Two third of infant deaths are neonatal mortality[13]. The survey reported a higher under-5-mortality in Duhok (26 per 1,000 live births) while, the rate was 18 per 1,000 live births in Erbil and 8 per 1,000 live births in Sulaymaniyah.

Updated mortality rates among adults living in KRI were not available. Recent mortality trends were impacted by the COVID-19 pandemic which had a devastating impact on the health conditions in KRI. As of June 4th, 2021, more than 172 thousand cases were confirmed since the outbreak of the pandemic[14]. Ninety two percent of the cases cured from the disease and 4,308 deaths were attributed to COVID-19[15]. Table (2.3) provides a comparison across the region as of January 1st, 2021, the table shows that the burden of the pandemic varied across governorates as the incidence rate per 100,000 was higher at Duhok (2,359 per 100,000) then Erbil (1,822 per 100,000) followed by Sulaymaniyah (1,407 per 100,000). Active case rate follows the

[13] UNICEF (2018) MICS Survey
[14] Kurdistan Regional Government, last updated on January 1st, 2021.
[15] https://gov.krd/coronavirus-en/dashboard/

same pattern with 40%, 35% and 24% in the three governorates. The hospitalized fatality ratio follows an inverse direction as it reached 54 per thousand in Sulaymaniyah, 25 per thousand in Erbil and 20 per thousand in Duhok.

To put the number of deaths attributed to the pandemic (3,247 death during 2020) in perspective, it should be noted that the yearly number of deaths occurring in KRI during 2018 was 16,557 deaths[16], i.e., the number of deaths from COVID-19 are nearly 20% of the yearly deaths occurring before the pandemic.

Table (2.3) COVID-19 indicators per governorate, 2020.

	Duhok	Erbil	Sulaymaniyah	Iraq
Confirmed cases	34,252	36,307	29,9908	596,193
Recovered cases	22,611	25,783	20,818	501,967
Deaths	683	908	1,656	12,824
Incidence rate per 100,000	2,359	1,822	1,407	1,423
Cured rate %	58	62.9	70.8	87.9
Active case rate %	40	34.6	23.8	9.9
Hospitalized fatality ratio per 1000	20.2	24.9	54.1	21.9

Number of cases as per January 1st, 2021 and rates as per December 11, 2020.
Source: World Health Organization.

3. Internal displacement and refugees

3.1 Internal displacement

The displacement that was associated with the ISIL invasion of territories of Iraq and Syria created a change in the population composition in KRI since 2014. Following ISIL's rapid expansion and intense fighting, new displacements peaked in 2014 at 2.2 million[17]. The battle for control of the city of Fallujah in April 2014, which ISIL had captured three months earlier, triggered 520,000 new displacements. Daily ground battles and airstrikes restricted IDPs' movement and aggravated the security situation in the city. After the fall of Fallujah, ISIL launched a major offensive on Mosul, Iraq's second-largest urban centre and capital of Ninewa governorate. It captured the city in June 2014 and held it until government forces launched an offensive to retake it in October 2016. The operation lasted nine months, and by the time it ended in July 2017

[16] Central Statistical Organization of Iraq. Statistical Yearbook 2018/2019. Table 10/11 A. http://cosit.gov.iq/documents/AAS2020/10.pdf

[17] https://www.internaldisplacement.org/publications/iraq-idps-caught-between-a-rock-and-a-hard-place-as-displacement-crisis-deepens

more than a million people, almost the entire population of Mosul, had been displaced[18].

According to a survey conducted in 2017[19], nearly 60% of internally displaced families reached KRI in 2014. Internally displaced population reached 1.1 million in 2016. More than half internally displaced households are originally from Ninewa Governorate and 20% from Salah-al-Din Governorate. Erbil and Sulaymaniyah host the most heterogeneous population, while most IDPs coming to Duhok are originally from Ninewa.

As indicated in Table (3.1), the KRI population in 2016 of 6.9 million, consisted of 1.1 million internally displaced persons (16% of the KRI population) and 200 thousand refugees (3% of the KRI population). The percentage of IDPs was higher in Duhok reaching 29% compared to 11% in Erbil and 10% in Sulaymaniyah. Among the 1.1 million IDP's, Duhok hosts 625 thousand persons, i.e., 56% of all IDPs living in KRI (see Figure 3.1).

Table (3.1) Population of KRI by type of residence, 2016

	Erbil		Duhok		Sulaymaniyah		Total	
	#	%	#	%	#	%	#	%
Host	2,060,000	86.6	1,470,000	67.2	2,080,000	88.9	4,895,840	81.0
IDP	257,424	10.7	625,000	28.6	229,000	9.8	1,111,424	16.1
Refugees	77,637	3.2	93,000	4.3	31,000	1.3	201,637	2.9
Total	2,395,061	100.0	2,188,000	100.0	2,340,000	100.0	6,923,061	100.0

Part of IDPs is living in camps, IDPs living in KRI are distributed among 21 camps[20]. Fifteen of those camps are located in Duhok, three in Erbil and three in Sulaymaniyah. Table (3.2) includes a list of the camps by district and sub-district.

[18] UNHCR (2020). The IDP-Initiative Quarterly, Update September 2020. https://reporting.unhcr.org/sites/default/files/IDP-Initiative%20Quarterly%20Update%20Sep20.%20Digital.pdf

[19] KSRO (2018). Demographic Survey Kurdistan Region of Iraq.

[20] UNHCR (2020) https://data2.unhcr.org/en/documents/details/83622

Table (3.2) List of camps in KRI.

	Governorate	District	Sub-district	Camp name
1	Duhok	Zakho	Darkar	Bersive 1
2		Zakho	Darkar	Bersive 2
3		Zakho	Darkar	Darkar
4		Zakho	Zakho Center	Chamishku
5		Sumail	Faida	Kabarto 1
6		Sumail	Faida	Kabarto 2
7		Sumail	Faida	Khanke
8		Sumail	Faida	Shariya
9		Sumail	Batil	Bajet Kandala
10		Sumail	Batil	Qadiya (Rwanga Community)
11		Al-Amadiya	Bamarni	Dawadia
12		Shekhan	Shekhan Centre	Mam rashan
13		Shekhan	Shekhan Centre	Shekhan
14		Shekhan	Baadre	Isiyan
15		Akre	Grdasin	Mamilyan
16	Erbil	Erbil	Erbil Centre	Baharka
17		Erbil	Erbil Centre	Harsham
18		Makhmour	Dibaga	Debaga 1
19	Sulayma-niyah	Kalar	Kalar Centre	Tazade
20		Sulaymaniyah	Qaradagh	Arbat IDP
21		Sulaymaniyah	Qaradagh	Ashti IDP

Demographic characteristics of camp population are presented in Table (3.3) by camp as of November 2020. The data show that these camps host 32,444 families comprising 166 thousand individuals. Duhok's camps host 85.1% of all camp IDPs in KRI, while Erbil and Sulaymaniyah host 8.1% and 6.8% respectively. The size of the camps ranges from one thousand to 23 thousand. Large camps are located in Duhok. The largest camp is Chamishku which hosts nearly 23 thousand individuals. Five other camps Shariya, Khanke, Isiyan, Rwanga Community, Kabarto 2 and Kabarto 1 host between 12 to 15 thousand individuals.

Age and sex distribution of broad age categories are included in the Table (3.3). Demographic data are summarized in Table (3.4). The table shows that the family size ranges from 4.7 to 5.3 individuals across camps. Camps in Duhok tend to host larger families, with less children and more elderly. Detailed demographic data on the camp level should inform humanitarian and development programs addressed to IDPs living in camps to provide better services especially to the most-needy groups.

Figure 3.1 Distribution of internally displaced population and refugees within KRI, 2016

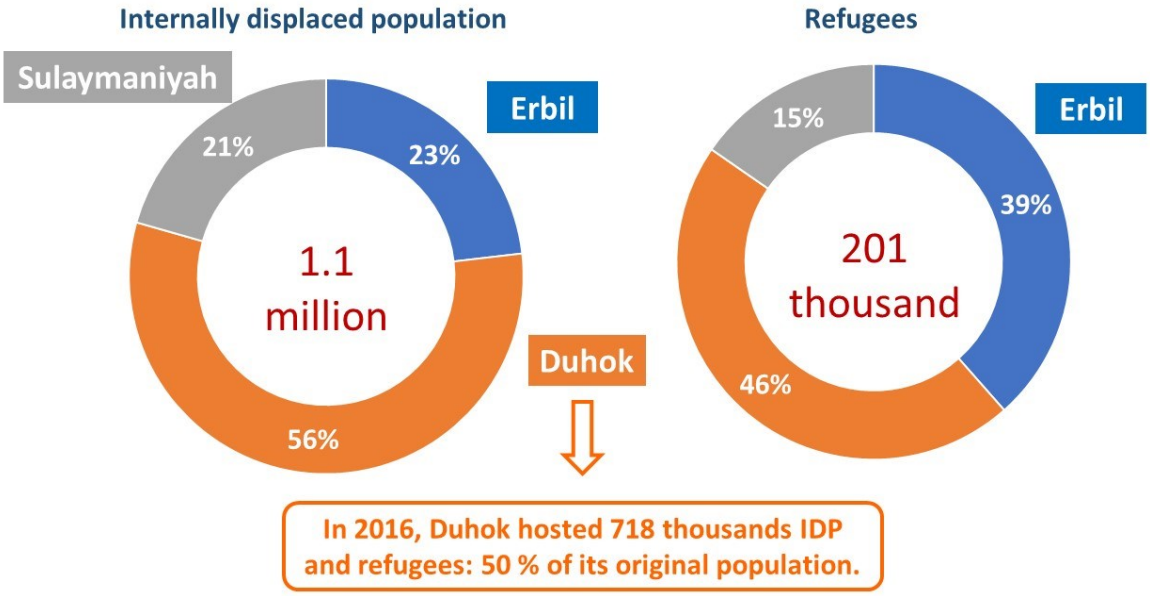


Table (3.3) Demographic characteristics of IDPs living in camps, 2020.

Camp name	Families	Population			<18		18-59		60+	
	#	T	F	M	F	M	F	M	F	M
Berseve 1	1,129	5,850	3,011	2839	1,321	1,309	1,541	1,436	149	94
Berseve 2	1,431	7,104	3,662	3442	1,724	1,607	1,771	1,727	167	108
Darkar	642	3,434	1,736	1,698	787	811	857	826	92	61
Chamishku	4,423	22,690	11,674	11,016	4,855	4,633	6,177	5,957	642	426
Kabarto 1	2,319	11,880	6,050	5,830	2,778	2,857	2,986	2,807	286	166
Kabarto 2	2,406	12,073	6,216	5,857	2,596	2,573	3,274	3,039	346	245
Khanke	2,698	14,192	7,190	7,002	3,111	3,122	3,692	3,617	387	263
Shariya	2,892	15,270	7,897	7,373	3,375	3,333	4,132	3,792	390	248
Bajet Kandala	1,710	8,727	4,473	4,254	1,943	1,950	2,281	2,131	249	173
(Qadiya) Rwanga Community	2,468	12,800	6,746	6,054	2,423	2,063	4,005	3,708	342	259
Dawadia	515	2,593	1,363	1,230	609	574	688	614	67	41
Mam rashan	1,492	7,416	3,873	3,543	1,625	1,557	2,053	1,835	195	151
Shekhan	644	3,294	1,652	1,642	691	707	890	886	77	43
Isiyan	2,516	13,228	6,741	6,487	2,815	2,875	3,576	3,388	351	223
Mamilyan	170	879	461	418	208	232	227	172	26	14
Total Duhok	**27,455**	**141,430**	**72,745**	**68,685**	**30,861**	**30,203**	**38,150**	**35,935**	**3,766**	**2,515**
Baharka	921	4,533	2,284	2,249	1,262	1,282	932	922	90	45
Harshm	286	1,449	733	716	412	408	295	301	26	7
Debaga 1	1,418	7,467	3,836	3,631	1,941	2,056	1,723	1,512	172	63
Total Erbil	**2,625**	**13,449**	**6,853**	**6,596**	**3,615**	**3,746**	**2,950**	**2,735**	**288**	**115**
Tazade	214	1,052	551	501	312	289	225	200	14	12
Arbat IDP	285	1,353	701	652	385	381	267	287	19	14
Ashti IDP	1,865	8,815	4,568	4,247	2,453	2,439	1,960	1,736	155	72
Total Sulaymaniya	**2,364**	**11,220**	**5,820**	**5,400**	**3,150**	**3,109**	**2,452**	**2,223**	**188**	**98**
Total KRI	**32,444**	**166,099**	**85,418**	**80,681**	**37,626**	**37,058**	**43,552**	**40,893**	**4,242**	**2,728**

Table (3.4) Demographic indicators of IDPs living in camps, 2020.

ID	Camp name	Family size	% females	% <18	% 60+
1	Berseve 1	5.2	51.5	45.0	4.2
2	Berseve 2	5.0	51.5	46.9	3.9
3	Darkar	5.3	50.6	46.5	4.5
4	Chamishku	5.1	51.4	41.8	4.7
5	Kabarto 1	5.1	50.9	47.4	3.8
6	Kabarto 2	5.0	51.5	42.8	4.9
7	Khanke	5.3	50.7	43.9	4.6
8	Shariya	5.3	51.7	43.9	4.2
9	Bajet Kandala	5.1	51.3	44.6	4.8
10	Qadiya (Rwanga Community)	5.2	52.7	35.0	4.7
11	Dawadia	5.0	52.6	45.6	4.2
12	Mam rashan	5.0	52.2	42.9	4.7
13	Shekhan	5.1	50.2	42.4	3.6
14	Isiyan	5.3	51.0	43.0	4.3
15	Mamilyan	5.2	52.4	50.1	4.6
	Total Duhok	5.2	51.4	43.2	4.4
16	Baharka	4.9	50.4	56.1	3.0
17	Harshm	5.1	50.6	56.6	2.3
18	Debaga 1	5.3	51.4	53.5	3.1
	Total Erbil	5.1	51.0	54.7	3.0
19	Tazade	4.9	52.4	57.1	2.5
20	Arbat IDP	4.7	51.8	56.6	2.4
21	Ashti IDP	4.7	51.8	55.5	2.6
	Total Sulaymaniya	4.7	51.9	55.8	2.5
	Total KRI	5.1	51.4	45.0	4.2
	Minimum	4.7	50.2	35	2.3
	Maximum	5.3	52.7	57.1	4.9

Vulnerability among IDPs living in camps is high. Nearly 38% of the 32,444 families living in camps residing in KRI are vulnerable. Nearly 27% are female headed families, 10% are elderly headed families and 0.5% are child headed families. These families should get more attention and support should give priority to vulnerable families. Available data on camp v. non-camp IDPs indicate that the age and sex distribution of both groups are similar (Table 3.5).

Table (3.5) Age and sex percent distribution for internally displaced individuals by residence (camp/non-camp), 2017.

Age group	Non-camp		Camp	
	Male	Female	Male	Female
0-14	22.0	19.8	23.1	22.6
15-29	13.2	12.4	14.8	15.9
30-44	9.5	9.6	7.2	7.2
45-59	4.2	4.9	2.5	3.2
60+	1.8	2.5	1.6	1.9
Total*	50.7	49.2	49.2	50.8

*Totals do not add up to 100% due to rounding.

Source: KSRO (2018).

A comparison of the age distribution of host community and IDPs across the three governorates shows that the age distribution of IDPs is younger. The percent of children below 10 among internally displaced represents 28% of the total population in Erbil, 25% in Duhok and 30% in Sulaymaniyah, compared to 23%, 23% and 21% among the host community in the three governorates respectively (Table 3.6).

Table (3.6) Age percent distribution of IDP's, refugees and host community, 2016.

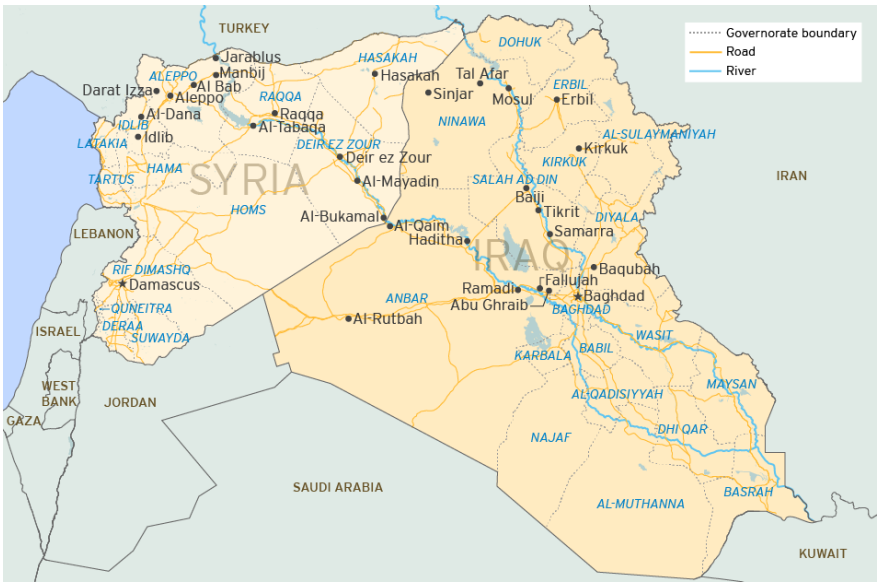
Age group	Erbil			Duhok			Sulaymaniyah		
	Host	Refugees	IDP	Host	Refugees	IDP	Host	Refugees	IDP
0-9	23	25	28	23	29	25	21	36	30
10-19	21	20	24	27	20	27	22	18	23
20-29	19	27	16	16	20	18	16	19	17
30-39	13	13	12	14	14	12	15	16	12
40-49	10	8	9	10	9	8	12	6	10
50-59	7	4	6	5	5	5	6	3	5
60+	8	3	5	5	3	5	8	2	3
Total	100	100	100	100	100	100	100	100	100

3.2 Syrian refugees

Recent statistics estimates[21] the number of Syrian refugees to be nearly 242 thousand. Sixty one percent of Syrian refugees live in urban areas and 31% in camps. Most Syrian refugees living in Iraq are settled in KRI and half of them are residing in Erbil. Nearly 123 thousand are resident of Erbil, 84 thousand in Duhok and 31 thousand in Sulaymaniyah. Three in every four Syrian refugees residing in Erbil or Sulaymaniyah

[21] UNHCR (2020). Iraq: Syrian refugee statistics.

are living in urban areas while only one third of those residing in Duhok are living in urban areas. In Erbil, Syrian who are not residing in urban areas are distributed among four camps (Darashakran, Qushtapa, Kawergosk and Basirma). In Sulaymaniyah, only one camp exists “Arbat” which host nearly 9 thousand Syrian refugees. Duhok, where Syrian refugees are more likely to live in camps, has the largest camp “Domiz” hosting nearly 31 thousand Syrian refugees. As shown in Table (3.7), households living in Duhok are more likely to be larger as the average household size is 3.8 per household vs. 3.2 and 3.1 in Erbil and Sulaymaniyah, respectively.



Source of map: https://spiritofamerica.org/project/help-navy-seals-advance-stabilization-efforts-western-iraq/syria-and-iraq-map_134496

Table (3.7) Geographical distribution of Syrian refugees, November 2020.

Governorate	Number of individuals	% of total Syrian refugees	Number of households	Average household size
Erbil	122,712	50.8	38,705	3.2
Duhok	84,421	35.0	22,420	3.8
Sulaymaniyah	31,212	12.9	9,913	3.1
Other	3,393	1.3	1,488	2.3
Total	241,738	100.0	72,526	3.3

Data on Syrian refugees registered in Iraq shows that Al-Hasakeh is the major origin of refugees with nearly 61%. The second highest origin is Aleppo with nearly 26%, and then Damascus with 9%. Table (3.8) illustrates the origin-destination matrix describing the situation in KRI. Selection of destination depends on several variables

including economic opportunities, culture homogeneity and proximity between origin and destination. A better understanding of the destination selection might inform different stakeholders supporting Syrian refugees.

Table (3.8) Distribution of Syrian refugees by place of origin and destination, Nov. 2020.

Origin		Destination			Total
		Erbil	Duhok	Sulaymaniyah	
Al-Hasakeh	#	68,895	66,720	11,603	147,218
	%	28.5	27.6	4.8	60.9
Aleppo	#	37,953	7,494	17,163	62,610
	%	15.7	3.1	7.1	25.9
Damascus	#	9,670	10,878	967	21,515
	%	4	4.5	0.4	8.9
Ar-Raqaa	#	6,043	483	1,934	8,461
	%	2.5	0.2	0.8	3.5
Total	#	122,561	85,575	31,668	239,804
	%	50.7	35.4	13.1	99.2

Source: Author calculation based on UNHCR (2020)

4. Population projections

4.1 Methodology

Population projections are estimates of the population for future dates. They are typically based on an estimated population consistent with the most recent decennial census and are produced using the cohort-component method. Projections illustrate possible courses of population change based on assumptions about future births, deaths, net international migration, and domestic migration. In some cases, several series of projections are produced based on alternative assumptions for future fertility, life expectancy, net international migration, and (for state-level projections) state-to-state or domestic migration[22].

In the cohort-component method, the components of population change (fertility, mortality, and net migration) are projected separately for each birth cohort (persons born in a given year). The base population is advanced each year by using projected survival rates and net international migration, and each year, a new birth cohort is added to the population by applying the projected fertility rates to the female population.

[22] https://www.census.gov/programs-surveys/popproj/about.html

For each of the three components of population changes, the level and pattern need to be carefully assumed to reflect the changes expected during the period of projections. Fertility assumptions should identify the level of fertility (total fertility rate) and the pattern of fertility (age specific fertility rates). Mortality assumptions should identify the level of mortality for both sexes (life expectancy by sex) and the pattern of mortality (age specific mortality rates by sex). Similarly, migration assumptions should identify the rate of migration and its pattern. The level and pattern of fertility is usually derived from a recent survey, and a model life table is selected to replace the age specific mortality rates. Migration assumptions depend on economic and political prospects. Spectrum software was used to generate the population projections.

4.2 Assumptions

The KRI population projections were conducted for a 20-year period starting from 2020. The projections are based on a previous set of projections conducted by KRSO in 2013[23]. The previous set of projections covers the period 2009 to 2020. The current projections used the resulting 2020 population by age and sex as the base year for projecting the population of KRI to 2040. The projections were conducted using the Spectrum software.

Table (4.1) presents the parameters of the fertility and mortality levels adopted for projecting the KRI population. The age specific fertility rates derived from the KRI Demographic survey[24] are applied to the set of TFR's to be used in the projections. The UN General life table is used to model the pattern of mortality. The total fertility rates are assumed to decrease from 3.1 child per woman in 2020 to 2.5 child per woman in 2040, and the life expectancy at birth is assumed to increase from 73.8 years in 2020 to 77.7 in 2040 for males and from 76.6 years to 80.7 years for females over the projection period. Migration was not included in the model. It is suggested to analysis this component in further research as more in-depth assumptions should be developed based on economic and political scenarios that depend heavily on the regional outlook in the next coming years.

Table (4.1) Assumptions of the population projections for KRI

	2020	2025	2030	2035	2040
Total Fertility Rate	3.1	2.95	2.8	2.65	2.5
Life expectancy male	73.8	74.8	75.8	76.7	77.7
Life expectancy female	76.6	77.6	78.7	79.8	80.7

[23] KRSO (2013). Population projection for Kurdistan Region of Iraq 2009 to 2020. [In Arabic]
[24] Section 2.5

4.3 Results

Applying the above-mentioned assumptions leads to projecting the population of KRI. As presented in Table (4.2), the population of KRI is expected to reach 7 million by 2027, and 8 million by 2034. Overall, the population will increase during the next two decades by nearly 2.68 million individuals, i.e., an increase of 43%. This increase corresponds to an annual increase of 1.82% on the average. The sex ratio of the total population is showing that the KRI population is equally divided between males and females.

Table (4.2) Population projections (2020-2040) by sex for KRI

Year	Male	Female	Total
2020	3,101,205	3,069,878	6,171,083
2021	3,165,970	3,132,554	6,298,524
2022	3,231,463	3,195,875	6,427,338
2023	3,297,779	3,259,901	6,557,680
2024	3,364,902	3,324,614	6,689,516
2025	3,432,750	3,389,945	6,822,695
2026	3,501,190	3,455,801	6,956,991
2027	3,570,093	3,522,089	7,092,182
2028	3,639,355	3,588,709	7,228,064
2029	3,708,876	3,655,566	7,364,442
2030	3,778,579	3,722,575	7,501,154
2031	3,848,399	3,789,665	7,638,064
2032	3,918,283	3,856,776	7,775,059
2033	3,988,165	3,923,840	7,912,005
2034	4,057,949	3,990,760	8,048,709
2035	4,127,476	4,057,387	8,184,863
2036	4,196,556	4,123,539	8,320,095
2037	4,265,005	4,188,976	8,453,981
2038	4,332,766	4,253,640	8,586,406
2039	4,399,902	4,317,579	8,717,481
2040	4,466,607	4,380,958	8,847,565

The population pyramids of KRI for the years 2020 and 2040 are illustrated in Figures 4.1 and 4.2. Comparing the two population pyramids indicates that the age and sex distribution is expected to reflect a narrower base, as the percent of population below 15 is expected to decrease from 34.7% in 2020 to 27.8% in 2040. Furthermore, the figures point out to an increasing population of elderly as the percent of population 65+ is expected to increase from 4.6% to 7.2%.

Figure 4.1 KRI Population pyramid, 2020

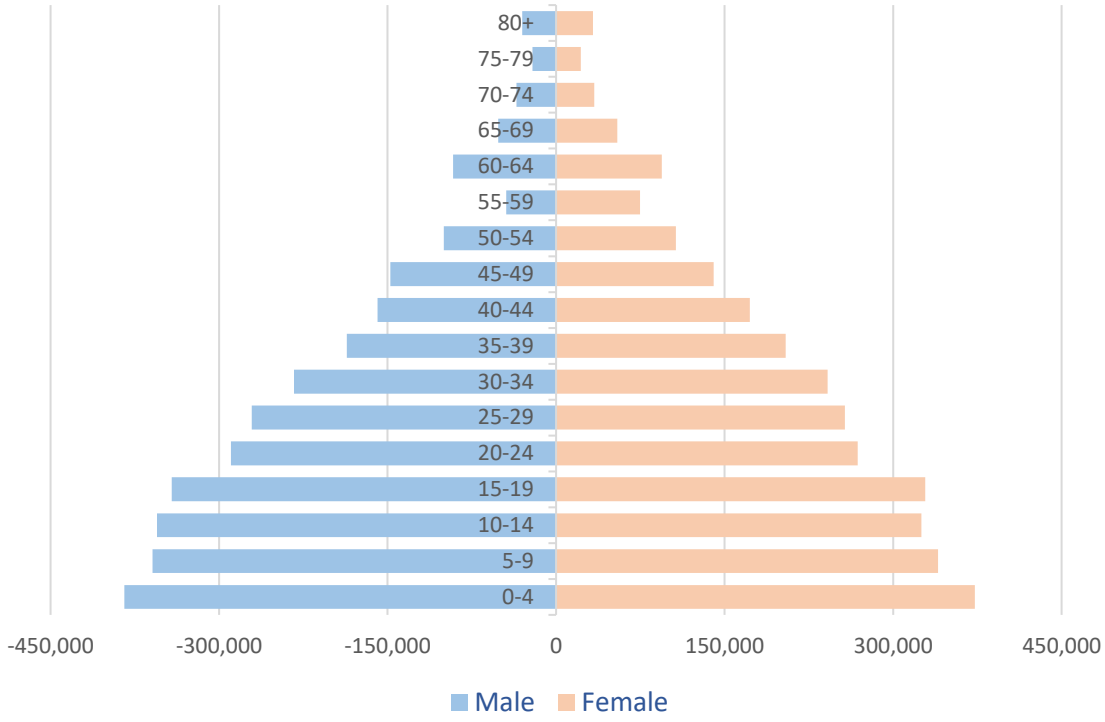
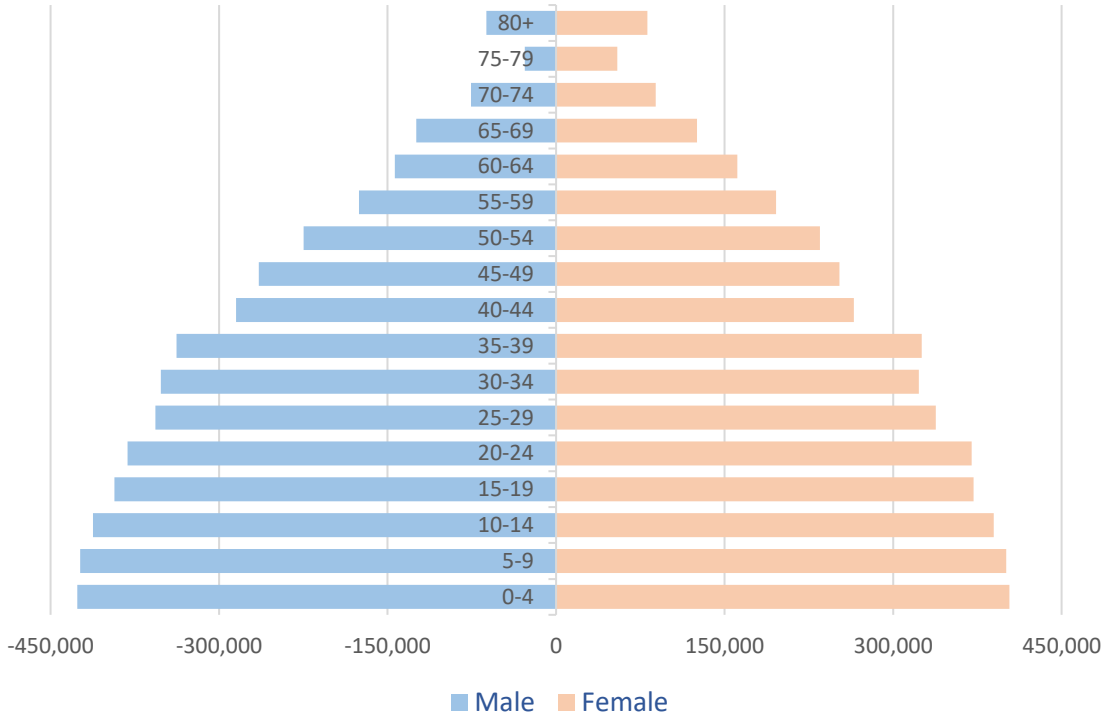


Figure 4.2 KRI Population pyramid, 2040



From the detailed results of the population projections, several indicators are calculated and presented in Table (4.3). As a result of the demographic transition, the KRI population is expected to observe a decrease in dependency ratio from 64% in 2020 to 57% in 2030. During the following decade KRI will experience a slower decrease in dependency ratio to reach 54% in 2040. A similar trend is reflected in the median age which will increase from 22 years to 28 years and in the child-woman ratio which will move from 47% to 37%. These changes toward an older age structure will have its impact on the population doubling time of KRI as it increased from 34 years in 2020 to 48 years in 2040.

Table (4.3) Demographic indices derived from the population projections of KRI.

	2020	2025	2030	2035	2040
Sex ratio	101	101.3	101.5	101.7	102
Dependency ratio	64%	62%	57%	55%	54%
Median age	22	24	25	27	28
GRR	1.51	1.44	1.36	1.29	1.22
NRR	1.45	1.38	1.32	1.25	1.18
Mean age at childbearing	29.1	28.9	28.8	28.7	28.7
Child-woman ratio	47%	43%	41%	39%	37%
CBR per 1000	24.8	23.6	22.3	20.7	19.1
Expected births (000)	153,076	160,945	166,924	169,699	168,635
CDR per 1000	4.3	4.1	4	4.1	4.4
Expected deaths (000)	26,611	27,765	30,213	33,545	38,551
Rate of natural increase (%)	1.93	1.8	1.65	1.49	1.36
Doubling time	34.2	35.9	38.4	42	47.5

4.4 Policy implications of population dynamics

Table (4.4) gives more results of the projections as it reports the number and percent of selected age groups which might be used as inputs for the purpose of planning and allocating resources for basic services including child health, reproductive health, education, labour force, elderly care, and social protection. It is important to mention that the size of different segments of the population is expected to change with different pace. For example, the number of children below 5 is expected to slowly increase overtime as fertility level decreases. As a result, the percent of children below 5 to the total population will decrease from 12.3% in 2020 to 9.4% in 2040. Similarly, children in the age group 5 to 14, will increase from 1.38 million to 1.63 million, which corresponds to a decreasing percent of the population (22.4% in 2020 to 18.4% in 2040).

Children below 15, will decrease from 34.7% to 27.8%, with only six-point decrease over two decades, KRI might not benefit from a demographic gift. Several Asian countries achieved a 10 percent decline in the percent of 0-14 population, including

China (36% in 1980 vs. 25% in 2000, Malaysia (33% in 2000 to 23% in 2020) and Singapore (from 33% in 1975 to 21% in 1995)[25]. If a further decline in fertility levels take place in KRI, increasing per-capita investment on human capital can open a demographic window which can boost the economy.

According to the assumptions of the population projections, population dynamics will result in a more aged society as the number of elderly (65+) in 2040 will be more than double what has been observed in 2020. In absolute numbers, the population above 65 will increase from 281 thousand to 640 thousand. Such increase has its implications on resource allocations for social security and health services.

Table (4.4) Population projections (2020-2040) for selected age groups

	2020	2025	2030	2035	2040
Population 0-4	757,213	769,265	805,272	826,940	829,660
Percent 0-4	12.3	11.3	10.7	10.1	9.4
Population 5-14	1,379,451	1,452,316	1,519,691	1,568,399	1,626,533
Percent 5-14	22.4	21.3	20.3	19.2	18.4
Population 15-24	1,228,950	1,348,728	1,375,408	1,448,542	1,516,147
Percent 15-24	19.9	19.8	18.3	17.7	17.1
Population 15-49	3,241,596	3,619,935	3,975,752	4,330,209	4,616,042
Percent 15-49	52.5	53.1	53.0	52.9	52.2
Population 15-64	3,753,047	4,217,658	4,767,264	5,289,778	5,751,659
Percent 15-64	60.8	61.8	63.6	64.6	65.0
Population 65+	281,372	383,457	408,927	499,744	639,712
Percent 65+	4.6	5.6	5.5	6.1	7.2
Females 15-49	1,613,054	1,791,564	1,953,735	2,116,766	2,245,345
Population 6-11	829,400	876,807	923,669	951,176	982,991
Population 12-14	407,819	415,569	439,352	454,346	477,576
Population 15-17	411,814	407,507	421,786	462,927	464,152

Table (4.5) illustrates a dashboard to help planners to take the KRI's population dynamics into consideration when allocating resources for basic services in a way that will address needs of different segments of the population while reducing misallocation of resources. For each program, the rate of increase of the target population in the decade is computed and the program is classified into one of the following categories depending on the rate of increase of the target population, where

[25] United Nations, Population Division, Department of Economic and Social Affairs, World Population Prospects 2019. https://population.un.org/wpp/

category A refers to a rate that is below 10%, category B refers to a rate that ranges between 10% and <20%, category C refers to a rate that ranges between 20 % and <30%, and category D refers to a rate that is 30% or more[26].

If a program falls in category "A" then the slow increase in the target group will allow for achieving an improvement in quality of service and for a higher level of equity among the population. If the program falls in category "B" then more resources are needed to improve quality or equity. Category "A" and "B" apply to education (see next section for the quality of education impact of productivity) and to reproductive health (given the high level of unmet needs) as improvement in quality and equity is crucial to achieve the sustainable development goals that emphasize "no one left behind." Even though, youth programs and employment are classified in categories "A" or "B", the current high level of unemployment among youth and the aspiration for migration among youth should be taken into consideration. Designing a more comprehensive life cycle approach programs from childhood to adulthood need to be taken into consideration as this age cohort might be the agent of change for a better KRI's future.

On the other hand, if a program falls within category "C" then maintaining service delivery will be challenging and more attention should be given to policies and resource allocation. Finally, if the program falls within category "D" then maintaining service delivery will be extremely challenging and much more attention to policies and resource allocation is needed along with a paradigm shift in designing and implementing effective and efficient interventions. Category "C" and "D" apply to job creation, services needed for aging population and to reproductive health services.

As illustrated by the dashboard, more resources should be directed to job creation as the working force will increase by 27% during the 2020's and by 21% during the 2030's. Labour force participation might increase as well specially among females which will create a larger demand on jobs. Another segment of the population that will increase sharply is the population 65+. According to the results of the population projections, the elderly population in KRI is the highest growing segment of the population as it will increase by 45% in the current decade and by 56% in the next decade. Such increase will be associated with a high demand on elderly care services and geriatric medical service. The care economy might present an opportunity for economic growth while providing social protection and better care for the elderly[27].

[26] It should be noted that this classification is subjective and can be adjusted according to future updating of population projections.

[27] ESCWA and UN Women (2021).

Table (4.5) Dashboard for the implications of population dynamics on sustainable development

Age group	2020 to 2030	2030 to 2040	Program
Population 0-4	6.3	3.0	Childcare
Population 5-14	10.2	7.0	Adolescence programs
Population 15-24	11.9	10.2	Youth programs & employment
Population 15-64	27.0	20.6	Employment
Population 65+	45.3	56.4	Elderly care & geriatrics
Females 15-49	21.1	14.9	Reproductive health
Population 6-11	11.4	6.4	Education
Population 12-14	7.7	8.7	Education
Population 15-17	2.4	10.0	Education

Room for improving quality or equity

More resources needed to improve quality or equity

Maintaining service delivery is challenging

Maintaining service delivery is extremely challenging

The inter-connection between population dynamics and social and economic development and the implications of population parameters on sustainable development need to be closely monitored and updated. Institutional arrangements to integrate population issues into social and economic development are needed. Such arrangements should be responsible for designing population programs in a participatory manner, monitoring relevant programs and coordinating activities across governmental and non-governmental organizations, and generate knowledge and support evidence-based population policies.

5. Human capital

Economic development and human capital are two inextricably linked concepts, with economic growth dependent on both human capital and physical capital. Investments in these areas complement and reinforce each other. To be productive, a workforce needs physical capital, such as infrastructure and equipment. In turn, a healthy and educated workforce can earn more and invest more to underpin and perpetuate economic growth.[28]

[28] World Bank (2020)

In principle, human capital consists of the knowledge, skills, and health that people accumulate throughout their lives, enabling them to realize their potential to become productive members of society. Investing in people through nutrition, health care, quality education, jobs and skills helps develop human capital, and this is key to ending extreme poverty and creating more inclusive societies.

Investments in human capital have become more important as the nature of work has evolved in response to rapid technological change. Markets are increasingly demanding workers with higher levels of human capital, especially advanced cognitive and socio-behavioral skills. When human capital improves, people are more likely to engage in the society and more likely to be tolerant, therefore, reaching a more inclusive society with less social and political tensions. In the long run, investing in human capital will allow for social mobility and will reduce the level of inequality in the society.

In 2018, the World Bank has launched the Human Capital Project (HCP), seeking to promote effective investments in people, which increases productivity and economic growth, as well as accelerated progress toward the Sustainable Development Goals. One of the pillars of the HCP is the Human Capital Index (HCI). The HCI is designed to capture the amount of human capital a child born today could expect to attain by age 18 in order to generate the political attention needed for catalytic action worldwide. The HCI quantifies the contribution of health and education to the productivity of the next generation of workers. Countries are using it to assess how much income they forego by calculating human capital gaps, and how much faster they can turn these losses into gains if they invest more, or simply just more effectively, in human capital. The components of the index (survival, schooling, and health) have direct links with at least three of the sustainable development goals that countries around the world have set to achieve by 2030.

- **Survival to Age 5:** By including under-5 mortality, the index links to SDG target 3.2 (to reduce neonatal mortality to 12 per 1,000 live births or lower and under-5 mortality to 25 per 1,000 live births or lower.)
- **Learning:** The index includes a measure harmonizing test scores from major international student achievement testing programs as well as an innovative measurement of learning, Learning-Adjusted Years of School, which supports SDG 4.1 (to ensure, among other things, the completion of equitable and good-quality primary and secondary education). By tracking changes in the expected years of quality-adjusted education, countries will be able to monitor their achievement toward this education target.
- **Health:** The index includes the adult survival rate and the prevalence of childhood stunting. The adult survival rate represents the probability that a 15-year-old will

survive to age 60. To improve this indicator, countries will have to work on reducing causes of premature mortality, which will also help achieve SDG target 3.4. Prevalence of stunting among children under 5 is one of the key indicators for achievement of SDG target 2.2, which aims to end all forms of malnutrition by 2030.

The index aims to draw attention to a wide range of actions across multiple sectors that can build human capital and accelerate progress towards the Sustainable Development Goal (SDGs).

The HCI in Iraq[29] scores 0.41 in 2020 which means that a child born in Iraq today will be 41 percent as productive when he/she grows up as he/she could be if he/she enjoyed complete education and full health. This is lower than the average for Middle East & North Africa region and Upper middle-income countries. As presented in Table (5.1), the sub-indices that are aggregated to form the composite index are:

1) Probability of Survival to Age 5. 97 out of 100 children born in Iraq survive to age 5.
2) Expected Years of School. In Iraq, a child who starts school at age 4 can expect to complete 6.9 years of school by his/her 18th birthday.
3) Harmonized Test Scores. Students in Iraq score 363 on a scale where 625 represents advanced attainment and 300 represents minimum attainment.
4) Learning-adjusted Years of School. Factoring in what children actually learn, expected years of school is only 4 years.
5) Adult Survival Rate. Across Iraq, 84 percent of 15-year olds will survive until age 60. This statistic is a proxy for the range of health risks that a child born today would experience as an adult under current conditions.
6) Healthy Growth (Not Stunted Rate). 87 out of 100 children are not stunted. 13 out of 100 children are stunted, and so are at risk of cognitive and physical limitations that can last a lifetime.

[29] World Bank (2020) Iraq Human Capital Index. https://databank.worldbank.org/data/download/hci/HCI_2pager_IRQ.pdf?cid=GGH_e_hcpexternal_en_ext

Table 5.1 Human Capital Index and sub-indices, Iraq 2020

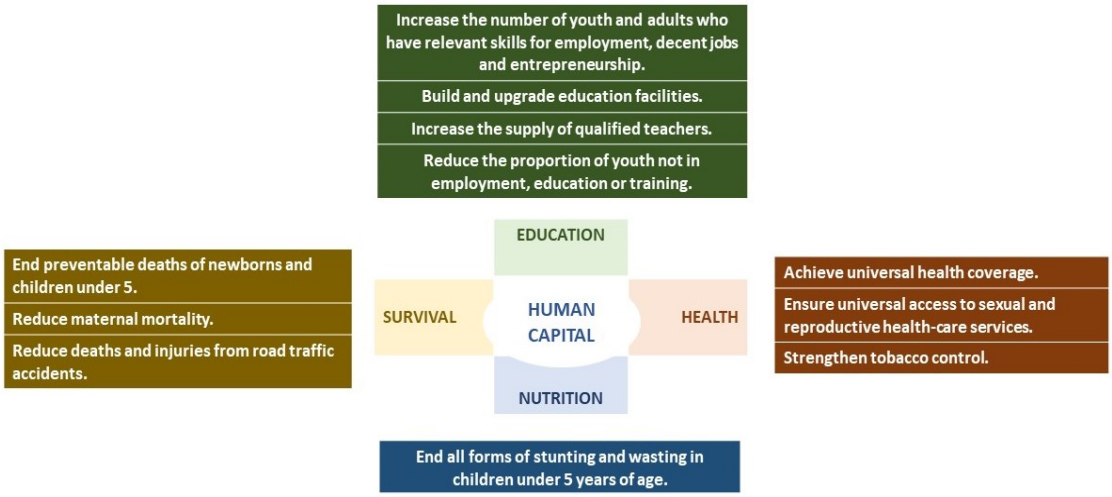
	Total	Males	Females
Survival to age 5	0.97	0.97	0.98
Expected years of school	6.9	6.7	7.2
Harmonized test scores	363	353	377
Learning Adjusted Years	4.0	3.8	4.4
Adults Survival Rate	0.84	0.82	0.87
Not Stunted Rate	0.87	0.88	0.87
Human Capital Index	0.41	0.40	0.42

Source: World Bank

Calculating the HCI for the Kurdistan Region of Iraq needs data for sub-indices. The MICS Survey provides data for the survival to age 5 and for the not stunted rate[30]. Other sub-indices need to be estimated. Given the framework linking the human capital to the SDG's (Figure 5.1), it is suggested that the Government of KRI produces these sub-indices periodically and uses the Human Capital Index as an evidence-based metric to:

- ✯ Assess its human capital stock,
- ✯ Identify actions across multiple sectors that can build human capital,
- ✯ Monitor and evaluate changes in human capital stock, and,
- ✯ Accelerate progress towards achieving the goals of its sustainable development agenda.

Figure (5.1) Human capital framework and sustainable development targets



[30] The under-five-mortality rate = 17 per 1,000 live births and the percent of children <5 who are stunted = 4.9%.

6. Sustainable development

6.1 Sustainable development goals

The Sustainable Development Goals (SDGs) are 17 interlinked global goals that form the 2030 Agenda. They are designed to be a "blueprint to achieve a better and more sustainable future for all". The SDGs were set in 2015 by the UN General Assembly and are intended to be achieved by the year 2030. Specific targets are identified for each goal along with indicators that are being used to measure progress toward each target. It is important when analysing the population situation to consider SDG's as they provide a wider picture that includes people, prosperity, peace, partnership, and planet.

Monitoring the performance of KRI on the SDG indicators is a way to identify priorities and bridge gaps. However, the monitoring and evaluation (M&E) system for monitoring the SDG's performance requires costly data collection activities. Several indicators have been made available through household surveys especially the MICS. When developing the new population strategy for KRI, the monitoring of the population programs should depend on updated indicators. Annex 2 includes the list of available SDG indicators for KRI and are compared to the level measured for the whole country.

The comparison shows that KRI is outperforming the average of the country in several goals and is behind in other goals. Table (6.1) provides a summary that can be useful in addressing the areas where improvements are needed.

Table (6.1) KRI SDG indicators compared to the country average, most recent year.

Goal	KRI better than the country average	KRI worse than the country average
Goal 1. End poverty in all its forms everywhere		Social protection.
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Child nutrition.	
Goal 3. Ensure healthy lives and promote well-being for all at all ages	Child health. Early pregnancy. Maternal care. Immunization.	Unmet need from family planning.
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Enrolment and drop-out. Gender parity. Skills.	
Goal 5. Achieve gender equality and empower all women and girls	Early marriage. Early pregnancy. Women education. Women computer skills.	Female genital mutilation.

Goal 6. Ensure availability and sustainable management of water and sanitation for all	Accessibility to water and electricity.	
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all		Clean energy.
Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all		Child labour
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels	Child abuse. Safety. Discrimination against women.	

6.2 Demographic dividend and sustainable development goals

A demographic dividend is the accelerated economic growth that can result from improved reproductive health, a rapid decline in fertility, and the subsequent shift in population age structure. With fewer births each year, a country's working-age population grows larger relative to the young dependent population. With more people in the labor force and fewer children to support, a country has a window of opportunity for economic growth if the right social and economic investments and policies are made in health, education, governance, and the economy. The following framework (Figure 6.1) is suggested to conceptualize the relation between demographic dividend and sustainable development goals within the context of KRI.

Figure 6.1 A framework of demographic dividend and sustainable development goals.

The trend toward lower fertility in KRI, suggests that the region might go through a demographic dividend [31] . The framework that links demographic dividend to sustainable development goals is illustrated in Figure 6.1. For the demographic dividend to result in a leapfrog in achieving the aspiration of the KRI, integrating the following four SDG's in the decision making and planning process is important:

1) Goal 3. Ensure healthy lives and promote well-being for all at all ages
2) Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
3) Goal 5. Achieve gender equality and empower all women and girls
4) Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all

The framework suggests that ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all will provide equal opportunities for all boys and girls of KRI. When this achievement is associated with a) ensuring health lives and promoting well-being for all and b) achieving gender equality and empowerment for all women and girls, the road will be paved toward sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.

It should be noted, however, that an enabling environment is a necessary condition for KRI to succeed in building a strong economy. Such enabling environment should consider engaging youth in the political process at all levels. This should be driven not only as a human right, but also to stop the brain drain of youth talents. This is especially important given the results of the youth survey[32]. When the survey asked about intention of youth for migration, the three governorates of KRI came the highest with 35% in Sulaymaniyah, 30% in Duhok and 26% in Erbil compared to a national figure of 13%.

7. Gender equality

7.1 Women empowerment

Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous, and sustainable world. Many indicators were developed by international organizations to measure women empowerment and gender equality. International organizations are producing these indicators on the country level and scarce data are available on the sub-national level. The current section

[31] More research is needed to show whether the region will go through a demographic dividend, when the window will open and how long it will continue.
[32] UNFPA and UNICEF (2020). Youth and adolescence survey 2019-2020 (in Arabic).

analyses indicators produced by UNDP, World Economic Forum and World Bank on the national level.

The Human Development Index (HDI) is the UNDP's flagship. It scored Iraq in 2019 as 0.689 and ranked 120th worldwide. The Gender development index for female is 0.587 vs. 0.744 for males. The gender gap is mainly due to difference in the GNI per capita that was estimated among males as seven-fold the average GNI among females[33]. Results of the Global Gender Gap (GGG) were consistent, as it ranked Iraq 152nd among 153 countries. The sub-index on gender gap economic participation and opportunity[34] places Iraq as the worst country worldwide. The Female labor force participation (FLFP) rate in Iraq is one of the lowest in the world at 13% and the LFP gender gap is ranked as 152.

A composite index reflecting whether laws facilitate, or hinder women's economic participation is yearly published by the World Bank. It showed that Iraq scores 45 (on a scale from 0 to 100). The index which is structured around the life cycle of a working woman summarizes eight indicators constructed around women's interactions with the law as they begin, progress through, and end their careers are used to align different areas of the law with the economic decision's women make at various stages of their lives. Iraq scores 100% on laws affecting women's decisions to work and 75% on constraints on women's starting and running business. Laws and regulations affecting women's pay, laws affecting the size of a woman's pension, and gender differences in property and inheritance are affecting economic participation as they scored 50%, 50% and 40% respectively. On the other hand, indices related to mobility, marriage and parenthood reflect a gloomy picture scoring 25%, 0% and 20% respectively. These exceptionally low scores explain the low female labour participation rate.

Social norms establish specific roles and responsibilities for men (as providers) and women (as responsible for domestic care.) Results from World Values Survey and Arab Barometer illustrate the strong hold that social norms have on organizations, communities, and individuals; and the effect that implicit and explicit biases play in determining gender roles and the opportunities available to both women and men. Responses from the surveys indicate that most Iraqis agree that university education is equally important for both sexes. On the other hand, attitude toward equal rights in employment are discriminating against women. Results from the two surveys indicate the following findings:

[33] UNDP (2020) Human Development Report 2019.
[34] WEF (2020). Global gender gap index.

1) Most women agreed that "being a housewife is just as fulfilling as working" with little difference between different levels of education.
2) Most males and females agreed that "men make better business executives than women", even among highly educated females.
3) Most Iraqis agreed that "when jobs are scarce, men should have more right to a job than women", with younger generation less likely to tolerate gender inequality.
4) Most Iraqi men opposed that "a woman travels abroad by herself", with women less opposed to women mobility freedom.

These social norms had its impact on Iraqi women, who are facing a double burden with little institutional or household support. Women are the main responsible for childcare, elderly care, and care for the people with disability. This is characterized with equal burden whether the woman is or is not working[35]. Population dynamics in Iraq has its impact on the magnitude of unpaid care work as the country is experiencing a high fertility rate[36] (child per women). Education institutions do not provide enough support to mothers with young children as the country has only 771 nursey/kinder gardens and the number of children enrolled below 6 are only 36.7 thousand children[37], which correspond to a 7% pre-primary school enrolment gross rate[38]. Furthermore, enrolment rate is reflecting inequality as 54% of the nurseries and kinder gardens are in Baghdad. In addition to childcare, women are also responsible for caring for elder and disabled family's members.

The above analysis was supported by indicators measured on the national level, as no corresponding figures are available for KRI. Many of the findings might apply as well to the situation in KRI. However, producing the above-mentioned indicators for KRI can provide insights to women empowerment policies. The rest of this section will report sub-national data that can inform policies on women empowerment in KRI.

Data from the MICS Survey show that sex parity in secondary education is in favour of KRI girls. In 2018, the number of boys and girls enrolled in primary education was equal. The sex parity increases with age, as 112 girls were enrolled in lower secondary education for every 100 boys and continue to increase to reach 138 girls for every 100 boys in upper secondary education. These figures are significantly higher than what has been observed for the whole country as shown in Table 7.1. The high sex parity in education is prevailing in the three governorates and is especially high in Erbil.

[35] Iraq Time Use Survey 2007.
https://www.unescwa.org/sites/www.unescwa.org/files/publications/files/sd-10-tp3_0.pdf
[36] Central Bureau of Statistics
[37] Nearly two third of children in early childhood care schools are children to working mothers.
[38] https://data.worldbank.org/indicator/SE.PRE.ENRR?view=chart&locations=IQ

Table (7.1) Sex parity in students enrolled, 2018

	Duhok	Erbil	Sulaymaniyah	KRI	Iraq
Primary	1.01	1	1.02	1	0.97
Low secondary	1.14	1.22	1.04	1.12	1
High secondary	1.44	1.44	1.29	1.38	1.15

In 2017, the percent of active population (in labor force) was 40% of the population 15+ of KRI. The percentage ranged from 36% in Duhok to 42% in Sulaymaniyah. Unemployment rate is 10% in KRI and is higher in Duhok (16%) compared to Erbil or Sulaymaniyah (9%)[39].

KRI's labor force is equally divided between public and private sectors. However, females are more likely to work in the public sector, as only 24% of the female labor force work in the private sector vs. 56% among male labor force. One of the major areas of contribution for females is the health sector.

Traditional societal norms cast women as mothers. The working hours of other types of work, that might keep them out of the house after dark, or roles that require them to work with males not in their families, are barriers that contribute to females in KRI not working. Sex disaggregation data show a large gender gap in labor force participation, as the percentage was 66% among males vs. 14% among females. Conservative societal norms create a paradox of equality in education and inequality in employment. Females are better achievers in education but do not find equal opportunities in employment. Such situation is not only against human rights but is also wasting a large part of the human capital of KRI.

Administrative data reflect the important role women play in the health sector in KRI. As presented in Table (7.2), 44% of physicians, 76% of dentists, 59% of pharmacists and 49% of paramedical personnel are females. Compared to the whole country, the percent of female physicians and pharmacists in slightly lower and the percent of female dentists and paramedical personnel is higher.

Table (7.2) Health workers by sex, 2018

	Duhok	Erbil	Sulaymaniyah	KRI	Iraq
Physicians					
Male	657	1,657	1,705	4,019	18,073
Female	403	1,478	1,226	3,107	15,363
Total	1,060	3,135	2,931	7,126	33,436
% females	38	47	42	44	46
Dentist					
Male	96	412	206	714	5,191
Female	287	1,091	933	2,311	11,522
Total	383	1,503	1,139	3,025	16,713
% females	75	73	82	76	69

[39] Kurdistan Region Statistical Office (2019). Kurdistan indicators 2014-2018.

Pharmacist					
Male	83	210	131	424	4,806
Female	75	370	153	598	7,716
Total	158	580	284	1,022	12,522
% females	47	64	54	59	62
Paramedical					
Male	334	1,216	2,670	4,220	44,149
Female	296	722	2,988	4,006	29,727
Total	630	1,938	5,658	8,226	73,876
% females	47	37	53	49	40

Source: Central Statistical Office, Statistical Yearbook 2018-2019, Iraq

7.2 Women protection

Women protection is intertwined to empowerment. As gender-based violence is limiting chances of women and girls to play a role in the public space. In addition to early marriage, that was addressed in an earlier section, women protection should consider female genital mutilation (FGM), human security and domestic violence.

1) Female genital mutilation

Female genital mutilation (FGM) is the partial or total removal of the female external genitalia or other injury to the female genital organs. FGM is always traumatic with immediate complications including excruciating pain, shock, urine retention, ulceration of the genitals and injury to adjacent tissue. Other complications include septicaemia, infertility, obstructed labour, and even death.

FGM is prevalent in Kurdistan Region of Iraq. The percent of women 15-49 who had any form of FGM was 37.5%. The practice is rare in Duhok governorate and highly prevalent in Erbil and Sulaymaniyah where 47% of women 15-49 had any form of FGM. The knowledge about the practice of FGM is higher as well in these two governorates. The MICS survey findings indicate that there is a declining in this practice in Kurdistan and that it is much more in the older generation. Among women who heard about FGM, 89.3% think that this phenomenon should discontinue. Among daughters 3.2% had FGM and it is mainly in Erbil and Sulaymaniyah governorates.

2) Human security

Human security for women in KRI is better than in other places of the country. According to the MICS Survey 2018, the percent of women age 15-49 who were victims of robbery, assault or who experienced physical violence of robbery or assault is less than 1% in KRI. The rate is half the average rate prevailing in the country. Most of the incidence were not armed robbery.

Another aspect of human security is the feeling of safety. Similarly, when compared to the average of the country, higher percent of women age 15-49 leaving in KRI feel safe to walk alone after dark in their neighborhood or stay alone after dark at home. As indicated in Table 7.3, the percent reporting that they feel very safe walking after

night in their neighborhood in KRI is three folds the corresponding figure for the average of the country. When comparing the percent of women feeling very safe staying alone at home (Table 7.4), the odds were 2.5 times reflecting higher level of feeling of safety in KRI.

It is important to note that the feeling of safety differs across governorates. With women leaving in Sulaymaniyah feeling more safe walking alone after dark (70% vs 30% in Erbil and 27% in Duhok) or staying alone at home after dark (68% vs 36% in Erbil and 29% in Duhok).

Table (7.3) Distribution of women 15-49 by feeling of safety walking alone after dark in their neighborhood, 2018

	Duhok	Erbil	Sulaymaniyah	KRI	Iraq
Very safe	26.8	29.8	70.2	42.0	14.0
Safe	48.8	39.0	20.8	35.2	34.9
Unsafe	2.8	1.9	2.5	2.3	10.0
Very unsafe	0.3	0.1	0.2	0.2	2.2
Never walk alone after dark	21.2	29.2	6.3	20.4	38.9

Table (7.4) Distribution of women 15-49 by feeling of safety staying alone after dark at home, 2018

	Duhok	Erbil	Sulaymaniyah	KRI	Iraq
Very safe	28.7	36.0	67.8	44.6	17.9
Safe	53.9	46.3	21.8	40.1	47.0
Unsafe	3.2	1.3	2.1	1.9	8.5
Very unsafe	0.3	0.1	0.4	0.2	1.4
Never stay alone after dark	14.0	16.3	7.9	13.2	25.1

3) Domestic violence

Iraq 2018 MICS assessed the attitudes of women age 15-49 years towards wife beating by asking the respondents whether they think that husbands are justified to hit or beat their wives in a variety of situations. The purpose of these questions is to capture the social justification of violence (in contexts where women have a lower status in society) as a disciplinary action when a woman does not comply with certain expected gender roles.

In Table (7.5), level of accepting domestic violence is presented. The data showed that one in every four women justifies that a husband bead his wife for any of the seven situations listed in the Table. The figure is lower than the average national figure (40%) and varies across governorates. Women leaving in Erbil are more submissive as 34% justify domestic violence while the percent is 23 in Duhok and 8% in Sulaymaniyah. Women are more likely to justify domestic violence in the case where wives leak house secrets, neglect children, or go out without permission.

Table (7.5) Distribution of women 15-49 who believe a husband is justified in beating his wife by reasons, 2018.

Reason	Duhok	Erbil	Sulaymaniyah	KRI	Iraq
If she goes out without telling him	13.7	21.9	4.4	14.7	28.6
If she neglects the children	14.6	22.2	4.0	14.9	25.3
If she argues with him	13.4	19.8	4.7	13.7	27.7
If she refuses sex with him	15.1	17.3	3.7	12.5	23.4
If she burns the Food	5.5	3.7	1.1	3.2	13.5
For any of these 5 reasons	20.1	32.1	6.7	21.7	36.5
If he feels she is wasteful	12.8	14.2	2.6	10.2	20.6
If she leaks house secrets	18.9	26.7	6.1	18.6	33.8
For any of these 7 reasons	22.6	34.0	7.9	23.4	39.9

7.3 COVID-19 and women empowerment.

The implications created by COVID-19 were devastating but are not gender neutral. Women and girls are facing more challenges, including:

1) Increase in gender-based violence and domestic violence,
2) High risk of losing jobs or working less if they are working in the informal sector,
3) Increase in unpaid care work,
4) Difficulty accessing reproductive health services.

These challenges imply that policies designed to mitigating the impact of the pandemic be more inclusive and gender sensitive.

8. Recommendations

8.1 Population dynamics and sustainable development

Population analysis (including population projections) should be an integral part of economic and social plans. According to the results of the population projections for KRI, the population dynamics is pointing out to several results that should be taken into consideration:

1) Between 2020 and 2040, the population of KRI is expected to increase by 2.7 million. The increase is equally divided between the two decades.
2) Increase of 12% in adolescents and youth 15-24 between 2020 and 2030, followed by an increase of 10% during the following decade,
3) Increase of 27% in labour force (15-64) between 2020 and 2030, and 21% between 2030 and 2040,
4) Increase of 11%, 8% and 2% of children who should be enrolled in primary, preparatory and secondary education between 2020 and 2030. During the following decade, the rate of change will change to 6%, 9% and 10%,

5) Increase in females in reproductive age of 21% and 15% in the 2020's and 2030's respectively, and,
6) Increase in aging population (65+) of 45% between 2020 and 2030 and of 56% between 2030 and 2040.

8.2 Sustainable development goals

KRI indicators shows the following areas for improvement:

- Social protection, as the percent of households that have benefited from any social transfers in KRI is 24% vs. 35% in Iraq.
- Using modern contraceptives, as the percent of married female in reproductive age is 26% in KRI 26% while it the national figure is 36%.
- Female genital mutilation as the prevalence of female genital mutilation in KRI is more that 5 folds the national figure (37% vs. 7%).
- Child labour in KRI is 10% which is twice the national figure.

8.3 Population policy and institutional framework

Designing a new population policy for KRI along with the establishment of a higher population council can provide a comprehensive approach to population challenges and can integrate population goals and sustainable development goals. For this approach to succeed, it is necessary to have:

1) A comprehensive and participatory vision for population,
2) A higher population council that is inclusive and efficiency,
3) A clear responsibilities and accountability mechanism, and,
4) A strong monitoring and evaluation system.

8.4 Women empowerment

Expanding the care economy in KRI with all its components can contribute to increase women economic participation as it will reduce the double burden on working women. In the meanwhile, it will increase job opportunities for women as females are more qualified to work in the care economy sector. Such shift from unpaid to paid care will improve the quality of education and then will contribute to human capital. Furthermore, it will improve the quality of care provided to the elderly and to people with disability. Finally, the care economy is an opportunity for the growth of the private sector and can partially diversify the economy by increasing the growth of non-oil sectors.

8.5 From humanitarian response to sustainable development

Strengthening the humanitarian-development nexus should be considered by the KRI government. It is recommended to work towards achieving collective outcomes that reduce need, risk and vulnerability, over multiple years, based on the comparative advantage of a diverse range of actors. The framework of the post 2015 sustainable development should be integrated.

8.6 Data gaps

There is a need for KRI to collect data and produce indicators to be able to draft policies and design interventions that are evidence-based specifically in the following areas:

1) Updated information on IDPs and refugees,
2) Updated SDG and human capital indicators,
3) Reproductive preferences and on intentions for migration among youth,
4) Child labour,
5) Unmet needs from family planning services and method mix, and,
6) Maternal mortality.

8.7 Further research

The following areas of research need to be considered to support decision-makers:

1) Tying population dynamics to sustainable development goals,
2) Localizing sustainable development goals for KRI,
3) Elaborate analysis of the results of the forthcoming census,
4) Demographic dividend in KRI,
5) Population projections,
6) Determinants of maternal mortality, and,
7) Impact of COVID-19.

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Appendix A: Sustainable development targets and indicators, KRI and Iraq, 2017.

Sustainable development target	Indicator	KRI	Iraq
1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	1.3.1 Percentage of household members living in households that received any type of social transfers and benefits in the last 3 months	24.1	34.9
1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	1.4.1 Percentage of household members using improved sources of drinking water either in their dwelling/yard/ plot or within 30 minutes round trip collection time	99.5	85.7
2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	2.2.1 Prevalence of moderate + severe stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age	4.9	9.9
	2.2.1 Prevalence of severe stunting (height for age <-3 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age	1.3	3.2
	2.2.2 Prevalence of moderate + severe malnutrition (weight for height <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting)	1.8	2.5
	2.2.2 Prevalence of severe malnutrition (weight for height <-3 standard deviation from the median of the WHO Child Growth	0.4	0.8

Sustainable development target	Indicator	KRI	Iraq
	Standards) among children under 5 years of age, by type (wasting)		
	2.2.2 Percentage of children under age 5 who are above two standard deviations (moderate and severe) of the median weight for height of the WHO standard	5.1	6.6
	2.2.2 Percentage of children under age 5 who are above three standard deviations (severe) of the median weight for height of the WHO standard	0.7	2.0
3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3.1.2 Percentage of women age 15-49 years with a live birth in the last 2 years whose most recent live birth was attended by skilled health personnel	98	96
3.2 By 2030, end preventable deaths of new-borns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under 5 mortality to at least as low as 25 per 1,000 live births	3.2.1 Probability of dying between birth and the fifth birthday	17	26
	3.2.2 Probability of dying within the first month of life	10	14
3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	3.7.1 Proportion of women age 15–49 years currently married who have their need for family planning satisfied with modern methods	35	55
	3.7.2 Adolescent birth rate aged 15–19 years per 1,000 women in that age group	40	70
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	3.8.1 Percentage of women age 15-49 years with a live birth in the last 2 years who during the pregnancy of the most recent live birth were attended (a) at least once by skilled health personnel (b) at least four times by any provider (c) at least eight times by any provider	 95 75 32	 88 68 22

Sustainable development target	Indicator	KRI	Iraq
	3.8.1 Percentage of children under age 5 with ARI symptoms in the last 2 weeks for whom advice or treatment was sought from a health facility or provider	69	44
	3.8.1 Percentage of household members using improved sanitation facilities	98.3	94.8
3.a Strengthen the implementation of the WHO Framework Convention on Tobacco Control in all countries, as appropriate	3.a.1 Percentage of women age 15-49 years who did not smoke cigarettes or any other smoked tobacco product during the last one month	3.6	1.3
3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines	3.b.1 Percentage of children age 12-23 months who received the third dose of DTP containing vaccine (DTP3) at any time before the survey	84	69
	3.b.1 Percentage of children age 12-23 months who received the third dose of Pneumococcal (Conjugate) vaccine (PCV3) at any time before the survey	23	29
	3.b.1 Percentage of children age 12-23 months who received the first measles containing vaccine at any time before the survey	83	71
4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes	4.1.4 Completion rate in primary	89.1	76
	4.1.4 Completion rate in lower secondary	65.9	46
	4.1.4 Completion rate in upper secondary	64.5	44
	4.1.5 Out-of-school rate in primary	4	8
	4.1.5 Out-of-school rate in lower secondary	20.1	30
	4.1.5 Out-of-school rate in upper secondary	26	40
	4.1.6 Children over-age for grade in primary	2.5	4
	4.1.6 Children over-age for grade in lower secondary	13	18
4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care	4.2.1 Percentage of children age 36-59 months who are developmentally on track in at least three of the following four domains:	89.4	79.3

Sustainable development target	Indicator	KRI	Iraq
and pre-primary education so that they are ready for primary education	literacy-numeracy, physical, social-emotional, and learning		
	4.2.2 Percentage of children in the relevant age group (one year before the official primary school entry age) who are attending an early childhood education programme or primary school	44.1	32.0
4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	4.4.1 Percentage of women age 15-49 who have carried out at least one of nine specific computer related activities during the last 3 months	10	6
4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations	4.5.1 Net attendance ratio (adjusted) for girls divided by net attendance ratio (adjusted) for boys (a) primary school (b) lower secondary school (c) upper secondary school	 1 1.12 1.38	 0.97 1.00 1.15
5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation	5.3.1 Proportion of women aged 20–24 years who were married or in a union before age 15	2.6	7.2
	5.3.1 Proportion of women aged 20–24 years who were married or in a union before age 18	18.1	27.9
	5.3.2 Proportion of girls and women aged 15–49 years who have undergone female genital mutilation/cutting.	37.5	7.4
5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women	5.b.1 Percentage of women age 15-49 years who own a mobile phone	82	67

Sustainable development target	Indicator	KRI	Iraq
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1 Percentage of household members with an improved drinking water source on premises, whose source water was tested and free of E. coli and available when needed	84.5	39.2
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	6.2.1 Percentage of household members with a handwashing facility where water and soap or detergent are present	99.4	97.0
	6.2.1 Percentage of household members using improved sanitation facilities which are not shared	97.0	91.8
	6.2.1 Percentage of household members with an improved sanitation facility that does not flush to a sewer and ever emptied	80.3	63.5
	6.2.1 Percentage of household members with an improved sanitation facility that does not flush to a sewer and with waste disposed in-situ or removed	13.0	23.6
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Percent of household members with access to electricity	100	100
	7.1.2 Proportion of population with primary reliance on clean fuels and technologies for cooking, space heating and lighting	7	42
8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	8.7.1 Percentage of children age 5-17 years who are involved in child labour	10.3	7.3
16.1 Significantly reduce all forms of violence and related death rates everywhere	16.1.4 Proportion of women age 15-49 years feeling safe walking alone around in their neighbourhood after dark	77	49

Sustainable development target	Indicator	KRI	Iraq
16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children	16.2.1 Percentage of children age 1-14 years who experienced any physical punishment and/or psychological aggression by caregivers in the past one month	71.1	80.9
16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all	16.3.1 Proportion of women age 15-49 experiencing physical violence of robbery and/or assault in the last 12 months and reporting the last incidences of robbery and/or assault experienced to the police.	9.5	6.1
16.9 By 2030, provide legal identity for all, including birth registration	16.9.1 Percentage of children under age 5 whose births are reported registered with a civil authority	100	99
16.b Promote and enforce non-discriminatory laws and policies for sustainable development	16.b.1 Percentage of women age 15-49 years having personally felt discriminated against or harassed within the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law	9.1	11.8
17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology	17.8.1 Percentage of women age 15-49 years who used the internet (a) during the last 3 months (b) at least once a week during the last 3 months	 51 46	 41 37

Appendix B: Glossary[40]

1) **Age-Dependency Ratio:** The ratio of persons in the ages defined as dependent (under 15 years and over 64 years) to persons in the ages defined as economically productive (15-64 years) in a population.
2) **Census:** A canvass of a given area, resulting in an enumeration of the entire population and often the compilation of other demographic, social, and economic information pertaining to that population at a specific time.
3) **Child-Woman Ratio:** The number of children under age 5 per 1,000 women ages 15-44 or 15-49 in a population in a given year. This crude fertility measure, based on basic census data, is sometimes used when more specific fertility information is not available.
4) **Demographic Transition:** The historical shift of birth and death rates from high to low levels in a population. The mortality decline usually precedes the fertility decline, resulting in rapid population growth during the transition period.
5) **Doubling Time:** The number of years required for the population of an area to double its present size, given the current rate of population growth.
6) **Gender:** refers to the economic, social, political, and cultural attributes, constraints and opportunities associated with being a woman or a man. The social definitions of what it means to be a woman, or a man vary among cultures and change over time. Gender is a sociocultural expression of particular characteristics and roles that are associated with certain groups of people with reference to their sex and sexuality.
7) **General Fertility Rate:** The number of live births per 1,000 women ages 15-44 or 15-49 years in a given year.
8) **Infant Mortality Rate:** The number of deaths of infants under age 1 per 1,000 live births in a given year.
9) **Internally displaced persons:** Groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border.

[40] Population Reference Bureau. https://www.prb.org/glossary/
United Nations Guiding Principles on Internal Displacement
https://emergency.unhcr.org/entry/44826/idp-definition

10) **Life Expectancy:** The average number of additional years a person could expect to live if current mortality trends were to continue for the rest of that person's life. Most commonly cited as life expectancy at birth.
11) **Maternal Mortality Ratio:** The number of women who die, as a result of pregnancy and childbirth complications per 100,000 live births in a given year.
12) **Median Age:** The age that divides a population into two numerically equal groups; that is, half the people are younger than this age and half are older.
13) **Neonatal Mortality Rate:** The number of deaths to infants under 28 days of age in a given year per 1,000 live births in that year.
14) **Net Reproduction Rate (NRR)** The average number of daughters that would be born to a woman (or a group of women) if she passed through her lifetime conforming to the age-specific fertility and mortality rates of a given year. This rate is similar to the gross reproduction rate but takes into account that some women will die before completing their childbearing years. An NRR of one means that each generation of mothers is having exactly enough daughters to replace itself in the population.
15) **Perinatal Mortality Rate** The number of fetal deaths after 28 weeks of pregnancy (late fetal deaths) plus the number of deaths to infants under 7 days of age per 1,000 live births.
16) **Population Momentum** The tendency for population growth to continue beyond the time that replacement-level fertility has been achieved because of the relatively high concentration of people in the childbearing years. Population Projection Computation of future changes in population numbers, given certain assumptions about future trends in the rates of fertility, mortality, and migration. Demographers often issue low, medium, and high projections of the same population, based on different assumptions of how these rates will change in the future.
17) **Post-Neonatal Mortality Rate** The annual number of deaths of infants ages 28 days to 1 year per 1,000 live births in a given year.
18) **Replacement–Level Fertility** The level of fertility at which a couple has only enough children to replace themselves, or about two children per couple.
19) **Total Fertility Rate (TFR)** The average number of children that would be born alive to a woman (or group of women) during her lifetime if she were to pass through her childbearing years conforming to the age-specific fertility rates of a given year. This rate is sometimes stated as the number of children women are having today.
20) **Under 5 (U5) Child Mortality** Probability of a child born in a specific year or period dying before reaching the age of 5.

21) **Unmet Need** Women with unmet need for spacing births are those who are able to become pregnant and sexually active but are not using any method of contraception (modern or traditional), and report wanting to delay the next child or limit their number of births. The concept of unmet need points to the gap between women's reproductive intentions and their contraceptive behaviour.