



# The Demographic Opportunity in Jordan

"A Policy Document"



The Higher Population Council  
October 2009

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## EXECUTIVE SUMMARY

The importance of this document stems from the expectation that Jordan - like other countries that have witnessed a recent decline in their high fertility rates – is on the verge of a historic demographic change that holds a “Demographic Opportunity” or “Demographic Window of Opportunity”. This opportunity is usually accompanied by various social and economic changes, which can take the form of challenges in case they are not employed appropriately. Therefore, prior preparation, planning and monitoring of these changes can create useful opportunities, which can occur in conjunction with the continued decline in fertility rates. Unlike developed countries, which closed the demographic window since several decades, the demographic window of many developing countries, including Jordan, is yet to occur.

The demographic opportunity becomes evident when the work age population (individuals aged 15-64 years) starts to grow significantly higher than the growth of dependents, under the age of 15 years and above 64 years.

This document includes population projections until 2050 for the resident population in Jordan (Jordanians includes and non-Jordanians), in order to determine the timing and duration of the demographic opportunity. It also includes a presentation of the methodology for comparison between three scenarios, one of which assumed the continuation of the current demographic situation into the future and the stability of the total fertility rate at 3.6 child per woman in reproductive age during the forecast period, which extended from 2007 to 2050 (Scenario I). The second scenario is consistent with the objectives of the National Agenda and aims to reach a total fertility rate of 2.5 child per woman in reproductive age by 2017. This rate will continue to decline until it levels with the replacement rate 2.1 child per woman in reproductive age in 2030 (Scenario II). The third scenario, agrees also with the objectives of the agenda, but a total fertility rate is expected to reach the replacement rate in 2040 (Scenario III). Note that it is possible to optimize the benefits of positive returns for the demographic opportunity, if the decline in fertility rates matches up with the second or third scenario, provided that there is an appropriate policy environment to profit from these benefits.

The results of the various projections indicate that an expected demographic transition will reach its peak in the early thirties, when the percent of Jordan's work age population significantly exceed that of the dependent population, where about 69% of Jordan's population would be of work age, while the percent of children among the population of Jordan would decrease from 36% to 25.5% in year 2030, and reaching 22% in 2050. As a result, the age dependency ratio will fall from 66 persons for every hundred individuals currently in the work age group, to 45 persons for every hundred individuals in 2030<sup>1</sup>.

The demographic transition in the population age structure, that is also accompanied by a decrease in family size according to the second scenario, will be achieved if the fertility levels decline according to the objectives and targets of the National Population Strategy, the National Reproductive Health Action Plan / Family Planning (phase II), and the National Agenda. However, if the fertility rates remain unchanged in the future, as in the first scenario, the percent of the work age population will not increase and will remain almost at its status quo, and the age dependency ratio will remain high as well.

The document outlines the benefits that will be accrued by Jordan from the anticipated demographic opportunity compared with the continuance of the status quo in the demographic situation, most importantly, the reduction of the population size by about 1.4 million individuals in 2030 and by about 4.6 millions in 2050. This will be reflected on the scope of population needs in all aspects of life, as well as on the change in age structure, where the percent of children will decrease to a quarter of the population size and the age dependency ratio will decline to 45 persons for every hundred work age individuals, thus becoming similar to developed countries but without increasing the support provided to the elderly, as is the case in these countries. In addition, the percent and number of individuals in the school age will decrease in the short term, especially in preschool and basic education, and in other stages of

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<sup>1</sup> The age dependency ratio varies and is much lower than the real economic dependency ratio, which shows the proportion of the population who are actually employed. Currently, this figure in Jordan is about 500 persons for every hundred working individuals (i.e., 5 to 1). Later on, this document shows the reasons for this high percent, most important of which is the high proportion of children to the total population of Jordanian society on one hand, and the concomitant rise in the proportion of economically inactive females, especially housewives, on the other.

education, in the medium and long term. In addition, Jordan will gain economic benefits by seizing the demographic opportunity, whereby the size of the labour force will increase thus turning the economic wheel and boosting the labour market by qualified and trained human power, provided that policies for training cadres are applied through programs that are thoughtfully designed to meet the market needs.

The document concludes by proposing policies to achieve and invest in the demographic opportunity and maximize the benefits that accompany it, while taking into account that some of these policies were already addressed by the National Agenda document. Accordingly, these policies were distributed by three main areas, namely: policies to accelerate the demographic transition and reach the «demographic opportunity», which included three main key policies, first of which is: policies to invest in health by increasing the effectiveness and efficiency of Reproductive Health/Family Planning programs; ensuring coordination between entities involved in raising awareness about Reproductive Health/Family Planning issues, while taking into account the compliance with the teachings of Islam and effect of customs and traditions; and promoting healthy behaviours among youth and adolescents. Second: policies for investing in education and higher education by improving the quality of education, advancing educational methods, and the process of educational guidance. This includes the use of relevant information technology within the educational systems and beyond, in order to help secondary and higher education students choose learning fields suitable to their abilities and in harmony with the requirements of development; help graduates of different educational levels get employment; and develop R & D activities in the different levels of education, particularly with regard to population issues. Third: policies to improve the economic and social situation of women by increasing women's participation in the labour market and activating the support services to enable women to balance their family obligations with work responsibilities and social life, and by eliminating discrimination in employment against women in order to increase their share in the available workforce.

The policies to gain benefits from the demographic opportunity included four sets of policies, first: policies to extend the labour market and its flexibility in order to take advantage of existing opportunities by encouraging engagement in secondary vocational education as an alternative to academic secondary education; linking education courses to job descriptions, their terms of reference and their required skills; amending legislation in order to strengthen the role of the national private Jordanian sector in the targeted economic development; increasing the contribution of local employment in the labour force; rationalizing standards and procedures for recruitment foreign labour, supporting micro and small business sector by providing financial and technical incentives; and encouraging self-employment and innovation in establishing individual projects. Second: policies of economic openness to achieve high growth rates by promoting the Jordanian product status in the global markets, and employing technology and expertise. Third: policies to mobilize savings and stimulate investment by improving the investment environment and increasing competitiveness; creating legislation and legal frameworks that would expand the activity of small and medium enterprise programs and supporting them in order to maximize their competitiveness; directing investors to invest in the less densely populated areas by activating legislation; ensuring the provision of incentives, and providing supportive infrastructure for investment to support population resettlement and reduce internal migration. Fourth: due to the disturbing consequences that may accompany lack of openness to the demographic opportunity, the document included social protection policies most important of which are; policies to develop community empowerment programs, family counselling and ensuring its sustainability; as well as policies to promote the concept of corporate social responsibility and its expansion.

Preparation for the post demographic opportunity requires moving towards optimal economic and social preparation. Consequently, the document addressed a series of general policies involving, but not limited to, the following: policy for supporting efforts to develop new insurances that are of more pressing need in light of demographic opportunity data such as: (unemployment insurance, maternity insurance, etc.), providing various forms of necessary support to expand the insurance categories and services, reviewing and re-drafting pension regulations to ensure their harmony and benefit from the demographic opportunity, while noting that expansion of the policies for the post-opportunity phase will be developed. The document concludes with a proposal for monitoring mechanisms for the currently implemented national strategies and action plans.

## 1. Preface

The human element represents the aim and ultimate purpose for development, where population issues being closely linked to initiatives that aim at achieving sustainable overall development. Therefore, high population growth rate requires attaining economic growth rates that are higher than the population growth rate in order to raise the standard of living, and provide jobs for the growing numbers of job seekers. In addition, the relationship between human resources and development is not limited to the size of available human resources per se, but also – of great importance – to the quality of these resources in terms of their educational qualifications, professional competence and skills. The availability of such resources and their capacities is considered a key condition for achieving development within a national and international economic environment that is characterized by competitiveness and openness. Accordingly, governments are giving great attention to the close relationship between development and the enhancement of human resources, which stimulated them to increase their investments in the areas of health, education and research and development.

While specialists differ with regard to the impact of population on economy, nevertheless there is a growing recognition that the population age structure is more important than its structure, which is the main concept for this document. Consequently, it has become important to quantify population numbers and identify their age composition in the coming years, in order to assess and meet the needs of the population as well as respond to the demographic changes prior to reaching those years, and in a manner that would serve Jordan's strategic interests while positively influencing the living standards of its citizens.

This document reflects on the benefits that Jordan can gain from planning and preparation essential to respond appropriately to the expected demographic change in the population structure and the demographic opportunity that accompanies this change. In addition, the document illustrates the effects that might be brought about by this change and some of the policies that are needed to respond to these changes. The document begins by defining the concept of the demographic opportunity that starts when the work age population group (15-64 years)<sup>2</sup> starts growing superior to the growth of the dependent age categories (children and elderly). The document further shows the positive effects that accompany the demographic opportunity as illustrated in the lessons learned from other countries. In addition, the document explains the necessary conditions for achieving and benefiting from the demographic opportunity, while referring to the effects of this opportunity and its impact on population size; growth rates; age structure; dependency ratio; size of the school aged and youth population; and the labour market represented by the size of the labour force and the new employment opportunities that should be provided. Accordingly, positive investment in the demographic opportunity is expected to contribute to an improvement in the quality of life for citizens, increased employment rates, lower unemployment rates, enjoying relatively high levels of development, and achieving savings in the sectors of education and social services that result from changes in the population age structure due to the decreasing fertility rates.

This presentation for investing in the demographic opportunity as a national comprehensive and indicative document complements and supports the National Agenda, national and sectoral strategies, like the National Population Strategy, the National Reproductive Health / Family Planning Action Plan, as well as education, training and other strategies. In addition, the document takes into account the principles of Islamic "Sharee'a", while basing its approach and directions in achieving the mentioned demographic opportunity on the guidance of the true Islamic religion and its tolerant terms, human rights, the right to education, health care and reproductive health, labour, justice, and welfare, as guaranteed by all national and international resolutions.

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<sup>2</sup> The work age population size was calculated in accordance with the international definition of the population of the working age who are between the ages of 15 and 64 years, in order to facilitate international comparisons, given that the Jordanian Labour Law specifies 16 years of age as the minimum age for admission to the labour market.

This document was prepared in a participatory and interactive manner, where the government entrusted its preparation to a steering committee (Annex 1) headed by the Ministry of Planning and International Cooperation, that was formed from relevant authorities represented by Ministries, governmental and Non-Governmental Organizations, the Academic and Media Sectors, and the Private Sector. In addition, the Higher Population Council was appointed as a coordinator and secretary for this committee. Technical Committees grew out of this Committee (Annex 2), which included representatives from most national, civil and private institutions chaired by the Higher Population Council. All these parties contributed to the preparation of the document, while the Higher Population Council took the role of the principal coordinator between all relevant entities during the preparation phase. Furthermore, preparation of this document took almost two years, whereby the initial phase included a series of meetings between members of the technical committees and the steering committee, represented by institutions and experts, in order to produce a detailed framework for action, a mechanism for implementing action, and the initial drafting of the document, as well as its review and revision.

The role of the Ministry of Planning and International Cooperation in supporting the preparation of the document, technically and financially, as well as that of the Department of Statistics in providing technical support in relation to projections of the labour market, labour force and required employment opportunities, are worth mentioning. In addition, various international organizations played an important role in supporting the preparation of this document, including the United Nations Fund for Population, the U.S. Agency for International Development and the United Nations Development Program.

The draft document was presented and adopted by members of the steering committee after conducting several revisions, while taking into account feedback from members. Later, the document was presented to the Prime Ministry, where it was discussed and approved.

## 2. THE DEMOGRAPHIC OPPORTUNITY

### 2.1 THE CONCEPT

Countries usually pass through the so-called demographic transition, which usually comprises of four stages as follows:

- **Stage I:** The mortality and fertility rates are very high, therefore the overall population growth rate is low.
- **Stage II:** The mortality rates tend to decline due to advances in medicine and public health. Meanwhile, fertility rates continue to rise, leading to a significant increase in the population growth rate.
- **Stage III:** The fertility rate starts to decline thus resulting in a lower population growth rate and in significant changes in the population age structure, where it transforms from a young one to a structure that is dominated by the work age population (15-64 years). This age category becomes capable of working and of obtaining income, and individuals become inclined to save a greater portion of their income. Moreover, the dependency ratio decreases and the opportunities for economic growth increase along with an increase in the size of the labour force and the tendency to save money. Consequently, the increase in savings enables financing of greater investments. The demographic opportunity occurs at this stage, during which the growth of the work age population (15-64 years) becomes significantly higher than the growth of the dependent category, under the age of fifteen and above 64 years, whereby the need to care for the young aged individuals (below 15 years) decreases.
- **Stage IV:** The large increase in population, who were in the young age group in the second phase and in the working-age in the next phase, move to retirement age, thus increasing the dependency ratio again. The increase during this stage occurs as a result of an increase in the percent of the elderly population (65 years and above), who depend on their savings in satisfying their needs, on family support or on the government.

It is clear from the above four stages, that during the third stage the economy retains the opportunity to benefit from the change in the age structure in order to boost growth significantly. This opportunity contains a restricted period of time where a greater number of people work and support a smaller number of the young and elderly population. However, this opportunity lasts only for a limited period of time, as a result of this group's advancement in age and their entry into retirement in the fourth stage, thus increasing the number of dependents again.

Optimal utilization from this demographic opportunity is achieved if the fertility rates continue to decline. Moreover, such an opportunity does not come off by itself; as it requires responses towards it in the context of social, economic and sectoral policies. Hence the opportunity cautions policy makers on the modality by which Jordan can benefit, now and in the coming years, from the current and anticipated increase in the proportions of young people and adults who are of working age.

## 2.2 BENEFITING FROM THE DEMOGRAPHIC OPPORTUNITY (LESSONS LEARNED FROM OTHER COUNTRIES)

The demographic opportunity carries many incentives and positive effects, provided that it is properly employed and managed in a manner that seeks the promotion and improvement of the lives of people in general. Experience of the Southeast Asian communities showed that the demographic opportunity has led to positive economic and social changes, such as<sup>3</sup>:

- The growing size of the labour force, which may contribute to the growth of gross domestic product.
- High level of savings in households due to lower fertility rates and smaller family size, where spending declines due to lower number of births, thus increasing the per capita gross domestic product; which enables families to invest in a fewer number of children and to provide them with educational opportunities. It also enhances the human capital which reflects positively on economy and productivity.
- Providing additional sources for financing investment projects, including foreign capital, through policies that attract and invest these resources in the market. This leads to increased domestic investment, which carried the economy forward and achieved high economic growth rates that contributed to improving development performance in the social, economic and other areas.
- Improving child health due to improved level of education, nutrition, living conditions, housing and increased investment and spending on health, which lead to a rise in life expectancy and detainments of individuals in the labour market for more years, thus easing off the pension and social security burden on the government.
- Improving the quality of education for the young population and developing adult skills as well. This occurs as a result of the low percentage of children compared to the other age groups. This decline leads to lower levels of overall spending, as well as spending on education of young children, which allows for greater investment in developing youths and keeping them abreast of the accelerating technological and scientific developments in all areas of life. This in turn contribute to strengthening the capacities of employees and balancing the acquired skills with the labour market needs.
- Reinforcing women's status and their health as a result of their increased opportunities in education and their higher marital age together with having a smaller number of children.

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<sup>3</sup> More on this concept and the experience of Southeast Asia can be found, for example, but not limited to: David Bloom, David Canning, Jaypee Sevilla, "The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change", 2003; David E. Boolm, David Canning, K.A.N. and Akumar Jaypee Sevilla, Kinga Huzarski, David Levy, and Econ Manjiri Bhawalkar, "Demographic Transitionomic Opportunity: The Case of Jordan", April 2001; Robert J. Barro and G. S. Becker, "Fertility Choice in A Model of Economic Growth", *Econometrica* 57 (1989): pp. 481-501; Matthew Higgins and Jeffrey Williamson, "Age Structure Dynamics in Asia and Dependence on Foreign Capital", *Population and Development Review* (23) 1997; pp. 293-261; Kelly and Allen, Schmidt Robert M. "Dependency and Savings of Population Economics", *Development Journal* 9 (1996) pp. 365-386.

- Increase in the percent of females in the labour force, and changes in their roles towards greater participation in public life due to the decreased reproductive and family burdens. This results from the decline in family size, which will contribute to the rise in family income.
- Increasing levels of urbanization, “the growth of the urban population” as a result of the increasing number of workers in industry and public services without damaging the growth of the agricultural sector.

**Achieving the benefits of the demographic opportunity requires the action towards accomplishing the following:**

- Continued decline in fertility rates.
- Adopting social and economic policies that are appropriate for benefiting from the demographic opportunity and for responding to the population changes, while ensuring the achievement of economic growth rates beyond the population growth rate in order to increase per capita gross domestic product.

### 3. JORDAN'S POPULATION STATUS

In order to achieve the demographic opportunity and meet the above-mentioned conditions, it becomes essential to understand the demographic, social and economic state of affairs, while taking into account the current and projected population changes, when drawing policies and programs of institutions in various development and economic sectors. The following summary presents the actual population situation in Jordan.

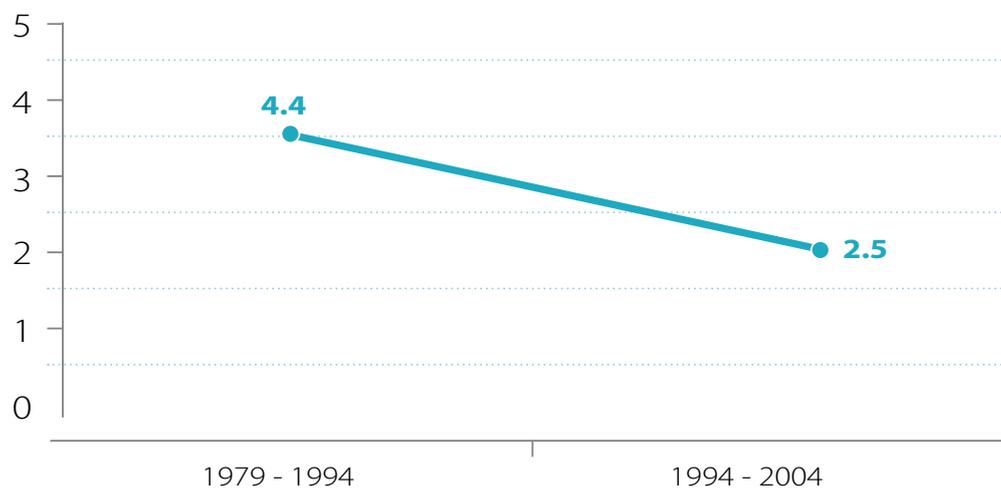
#### 3.1 THE DEMOGRAPHIC STATUS

##### 3.1.1 Population Size and Growth

The general population and housing census, conducted by the Department of Statistics in 2004, showed that the number of Jordan's population has reached approximately 5.3 millions, 7% of which are non-Jordanians. Moreover, data shows that Jordan's population size has doubled about nine times during the second half of the last century, where Jordan's population was estimated at about 5.85 millions at the end of 2008<sup>4</sup>.

The average population growth rate, for the periods between the censuses in Jordan, reached 4.4% between 1979 and 1994, and 2.5% for the period 1994-2004 (see Figure 1). Despite the decline in the population growth rate, the current rate remains high<sup>5</sup>, which will cause the population to double after 28 years if the rate stabilizes at the mentioned level.

**Figure (1): Annual Population Growth Rate Calculated between Censuses**



Source: General Department of Statistics / Population and Housing Census 1994, and 2004 Census

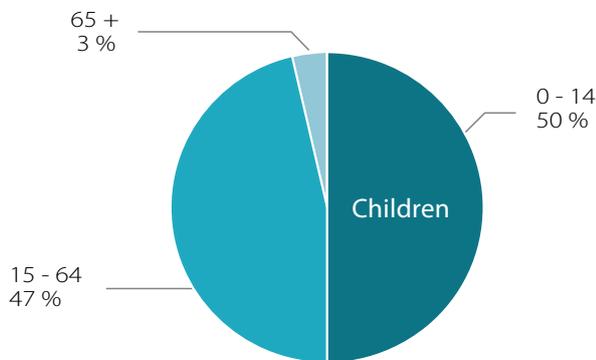
<sup>4</sup> [http://www.dos.gov.jo/dos\\_home\\_a/main/index.htm](http://www.dos.gov.jo/dos_home_a/main/index.htm); 31 December, 2008.

<sup>5</sup> All population growth rates were calculated using the exponential change equation.

### 3.1.2 Population Age Structure

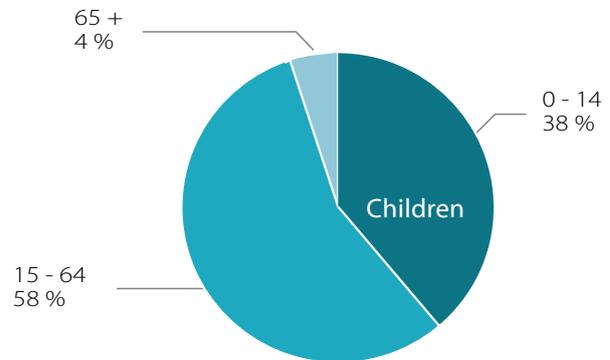
As shown in figures (2a) and (2b), the population age structure witnessed change in the past three decades. The most important feature of this change is definitely the decline in the percent of children (individuals under the age of 15 years) as well as the increase in the proportion of the work age population group (15-64 years). However, in spite of the change in the population age structure, the Jordanian society is still characterized by a youthful status, where about 38% of its population is under the age of 15 years, and about 58% are in the age group of 15-64 years, while 4% are 65 years and above. Therefore, with the currently high proportion of children, further rapid population growth and labour force is expected in the future, together with a continued presence of high dependency ratios. The decrease in the proportion of children in Jordan over the last thirty years, as shown in Figure (2b), does not indicate a decrease in their numbers. On the contrary, the number of children has doubled from about 1.1 to 2.2 millions during that period.

**Figure (2a) Jordan's Population by Age Groups 1979 Census**



Source: General Department of Statistics / Population and Housing Census 1979

**Figure (2b) Jordan's Population by Age Groups 2007 Census**



Source: General Department of Statistics / Population and Family Health Survey 2007

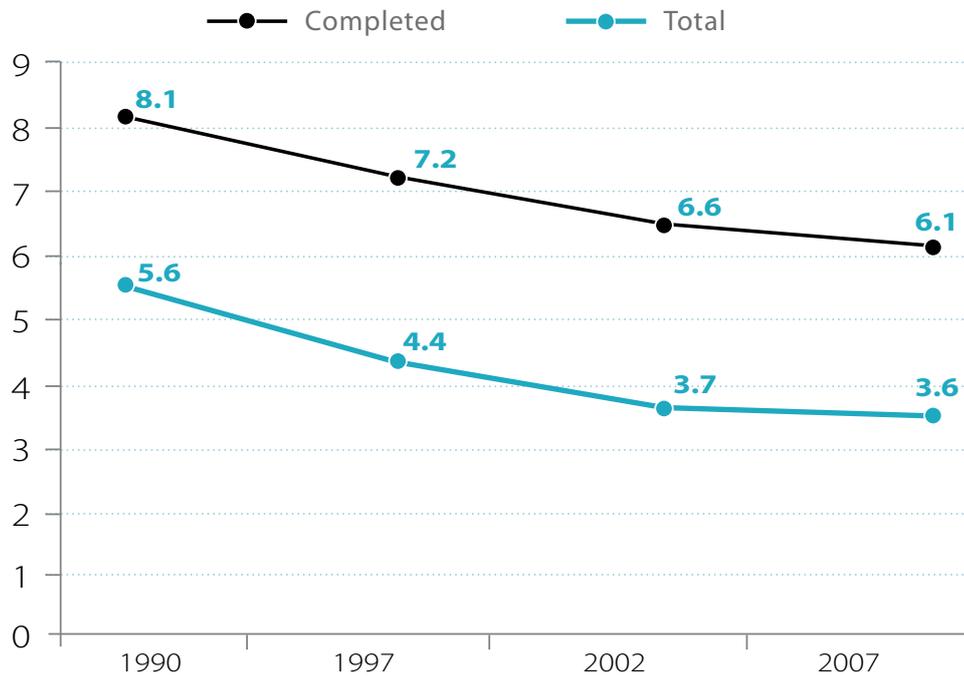
### 3.1.3 Causes of Population Change

As is the case in any society, there are three direct causes for population change: reproduction, mortality (natural change), and net international migration (unnatural change). In Jordan, these reasons led to a rapid population increase during the last period<sup>6</sup>. However, reproduction had a larger role in the population change, despite the continuous decline in the completed total fertility rate (actual)<sup>7</sup> in the past two decades. Hence, during the past twenty years, the average number of children born for a single Jordanian woman decreased by two births from 8.1 to 6.1 child per woman in reproductive age. In addition, the total fertility rate declined by a similar amount from 5.6 to 3.6 child per woman in reproductive age, as shown in Figure (3). According to the results of the 2004 General Census of Population and Housing, this decline led to a smaller average of family size, reaching 5.4 individuals in 2004, compared to 6.2 individuals according to the results of the 1994 General Census of Population and Housing.

<sup>6</sup> Since Jordan is among those countries with incoming and outgoing international migration, it must seek to establish a full-time department dedicated for monitoring, analyzing and publishing migration data, in order to ensure its optimal employment, because migration has important implications on all aspects of life in Jordan, particularly on the size, structure and distribution of the population.

<sup>7</sup> The completed total fertility rate is the average number of children that a woman actually reproduce (any woman that has finished or completed her reproductive life or who entered the 45-49 year age group)

Figure (3) Total Fertility Rate



Source: Population and Family Health Survey for years: 1990, 1997, 2002, 2007

The decline in fertility rates does not necessarily mean a decline in the annual number of births. On the contrary, despite the previously outlined drop in fertility rate, official records indicate an increase in the annual number of births registered each year. The reason behind this is the population base, particularly the large number of girls and women in the childbearing age (15-49 years), which are currently about a million and half females. This number is projected to increase to two million in 2020 as a result of entry in the next few years of nearly one million girls (currently under the age of 15 years) into the reproductive stage, and the exit of half a million of them from it.

There are several factors related to the direct causes of low levels of fertility rates including: increase in the rate of contraceptive use (family planning) among couples over the recent decades to reach about 57%; increase in the age at first marriage due to the increase in education opportunities for females, which led to a decrease in the percent of married women (15-49 years) who are likely to become pregnant and reproduce. These changes and their underlying factors result in a decrease in the proportion of females in the (15-49 years) age group who have been married (ever married)<sup>8</sup>, by nine percent over the last thirty years (from 66% in the mid-seventies to 57% in 2007), (see Table 1).

<sup>8</sup> Every female who has been previously married. This category includes currently married, divorced, widowed, or separated.

**Table (1) Percent of Ever Married Females in the 15 -49 Years Age Group**

Age Group	Percent (%) of Ever Married		The Change During the Past 30 Years
	Mid Seventies	2007	
15-19	20	6	-14
20-24	64	37	-27
25-29	87	69	-18
30-34	95	79	-16
15-49	66	57	-9

Source: World Fertility Survey 1976. Population and Family Health Survey, Jordan, 2007

### 3.1.4 Dependency Ratio

According to its current age population structure, Jordan is classified as a young community, which means that the load or burden on the current working age population is increasing. Currently, the dependency ratio is 66 persons per hundred individuals in the work age group of 15-64 years, while the dependency ratio does not exceed 47 in the European countries, which is divided equally between child support and that of the elderly. However, if the real economic dependency ratio was taken into account (percent of total population to those who are actually working), data shows that 20% of Jordanians are actually working and providing for themselves as well as for the other 80%, thus resulting in a real dependency ratio of 5:1. This implies that each worker funds for himself and for four others<sup>9</sup>. These high percentages are attributed to the low level of economic participation of the population (exclusively among the females), where according to results of the Labour and Unemployment Survey conducted by the General Department of Statistics in 2007, the revised economic participation rate of the population from both sexes is 39.8% (labour force divided by the number of population 15 years and over).

### 3.1.5 The Elderly

Based on the Population and Housing Census of 1979, the percentage of elderly population (65 and above) in Jordan accounted for 2.8%. This percent started to increase gradually after the 1994 Census, where according to the Department of Statistics it reached 3.24% in 2007. This increase is attributable to the change in the population age structure in Jordan.

<sup>9</sup> This high percent may be related to two interrelated reasons resulting from increased fertility rates which on one hand increase the percent of children in the community and prevent the high participation of females in the workforce on the other.

## 3.2 SOCIAL AND ECONOMIC STATUS

Investment in health and education is the cornerstone for sustainable economic growth, where, until mid-sixties, countries of East Asia were well-known for poverty and underdevelopment. Within 30 years, the development process in these countries was able to fulfil a huge developmental leap (known as the Asian miracle), by considering the human being as its development pillar.

### 3.2.1 Education and Higher Education

Education is considered one of the pillars for human development. Furthermore, education issues are intertwined with issues of human power, employment and government spending on services. Furthermore, education is linked to the level of economic and social status of all countries and is affected by the demographic conditions that prevail in a society. Additionally, educational distribution and the high levels of it genuinely affect fertility rates, where highly educated parents tend to have smaller families. Consequently, the better-educated work force, are more able to adapt to technology and modern sophisticated techniques. As a result of investment in education and its quality, the workforce becomes more competitive and productive.

The process of education in Jordan reflects government's great interest in providing educational opportunities for everyone throughout the Kingdom. In addition, education in Jordan is compulsory for ten years. Multiple and diverse educational opportunities, as well as its equal gender distribution in Jordan, resulted in the high rate of female enrolment at the various education levels that occasionally exceeded that of males (secondary level 101.5%, intermediate diploma 157%). This variation levels off at the university education level. Furthermore, the government tackled the problem of school dropouts, which results from labour of school aged children, whereby it signed an agreement to combat child labour. Currently, and according to domestic legislation and international standards, the Government is working on promoting official and popular efforts to combat child labour and to withdraw children from the labour market in order to put them back to school. As for the problem of illiteracy in Jordan, data shows that its rate dropped from 88% in 1952 to 7.7% in 2008.

Higher education occupies a prominent position in the Jordanian society, where institutions of higher education work to meet the developmental needs of the society and provide it with qualified and specialized cadres in various fields of knowledge. These cadres are considered the brainpower that forms the core technical structure that is capable of developing scientific research, production of knowledge and technology. Higher education witnessed extensive expansion and steady growth in the number of universities and the number of students enrolled at these universities in order to meet the growing demand for higher education. In addition, the amount of spending on projects supporting scientific research have increased, where by the end of 2004, such expenditure mounted to 0.4% of the gross domestic product.

### 3.2.2 Health

The health sector in Jordan witnessed remarkable developments reflected positively on the health status and wellbeing of the citizens. As a result, the general health indicators reflect the quality and efficiency of the health services in Jordan, thus placing Jordan in the top tier. Consequently, health indicators for year 2007 indicate a substantial increase in life expectancy for the Jordanian citizen, a decrease in the infant mortality rate 20 deaths for each 1,000 live births, and an increase in measles vaccination coverage rate to 100%. In addition, health insurance coverage expanded to include new categories such as, children below six years of age, the elderly and residents of remote and less fortunate areas.

The demand for health services increased due to the rapid population growth; the shift in disease pattern; high incidence of non-communicable diseases such as heart disease, cancer, and diabetes; and the high percent of elderly and youth population. All of which require concerted efforts and strengthening the scope of cooperation and coordination among concerned parties at the national level, in order to advance the health sector comprehensively.

### 3.2.3 Vocational and Technical Training and Employment

Vocational and technical training and educational programs are available at 190 comprehensive high schools affiliated with the Ministry of Education, with about 28 thousand students<sup>10</sup> currently enrolled in all fields at these schools. In addition, there are 50 vocational training centres affiliated with the Vocational Training Institute with a total capacity of 15 thousand trainees, as well as 26 thousand students currently enrolled in 52 government and private community colleges. However, the investment rate of these institutions fall significantly short of their capacity, which indicates a low enrolment at its programs thus reflecting on the rising cost of education and training for a single student at these institutions. Recently, the government launched new training and employment specialty programs in order to reduce unemployment and involve the private sector in implementing these programs. Consequently, there is a need to assess this trend in relation to its technical and economic dimensions.

The training and employment sector suffers from a decrease in the numbers of students enrolled in training, and vocational and technical educational institutions, as well as a decrease in their proportion from the total number of students enrolled in different educational programs. There is no doubt, that this decline is due to the negative perception of technical and vocational work and training, as well as to considering it a difficult domain when movement to other levels of education is pursued, thus leading to low demand for enrolment in such programs. In addition, this domain suffers from the utilization of trainers and staff through a system that is mainly based on scientific qualifications, without requiring pertinent field experience, within a legislative system that lacks incentives for facilitating the attraction of highly qualified and well experienced individuals. Moreover, instructors lack skills, training techniques, and skills for managing training situations. Other concerning issues in these programs include: the weak partnerships with the private sector, which leads to building a non-integrated training, and vocational and technical education, the lack of participation in designing and implementing programs as well as in evaluating graduates. Generally, effective evaluation of the graduates of training programs and vocational and technical education is weak, where evaluation is undertaken by the implementer without the participation of employment institutions. In addition, there is a general weakness in the quality and regulatory aspects of the training programs, as well as vocational and technical non-formal education.

### 3.2.4 Economic Situation

During 2008, the growth rate in the Gross Domestic Product at constant prices was 7.9% compared to 6.6% in 2007. This coincided with the ability of the Jordanian economy to attain 24% growth rate for current prices in 2008, compared with 16.2% in 2007. The achieved growth in the Jordanian economy can be attributed to the growth seen in most economic sectors. Conversely, the average level of prices in 2008 showed an upward trend, thus posing a major challenge for the economy, where the inflation rate, as measured by the relative change in the consumer prices index, reached 14% compared with 4.7% in 2007. This can be attributed to the surge of worldwide prices of energy and food in a manner that has exceeded

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<sup>10</sup> According to Statistics from the Ministry of Education for Year 2008.

all expectations. Annual results of the Labour and Unemployment Survey, published by the Department of Statistics for year 2008, showed a decrease of 0.4% in the unemployment rate which reached 12.7% when compared to its value of 13.1% in 2007. In addition, the number of jobs created during the first half of 2008 increased to reach 38 thousand jobs compared to 36 thousand during the same period in 2007. Data issued by the Department of Statistics also indicates a decline in the poverty rate which reached 13% in 2006, compared with 14.2% in 2002, as well as a rise in the absolute poverty line from 392 JDs per capita in 2002 to 556 JDs per capita in 2006.

The Jordanian labour market is considered a receiver and sender for labour or employment. When compared to other countries, its most important feature is the low rates of economic participation, where the economic participation rates in Jordan is one of the lowest level among the Arab countries and world wide. Data issued by the Department of Statistics indicates that the refined rate of economic participation in 2008 reached 39.5% (64% for males and 14.7% for females). This low rate of economic participation is due to the high proportion of the population in the age group of 15 years or less, which mounted to 37.3% of the total population in 2008, as well as to the low participation of women in economic activity. The Global Gender Gap Report issued in 2006, indicated a very low rank for Jordan in terms of women's economic participation and the creation of employment opportunities for them. The report ranked Jordan as number 104 out of 128 countries, with women's economic participation in Jordan being even lower than other similar countries. Gender measures for year 2008, indicate that the gender gap for economic participation has reached 48.9%, which means that women's economic participation is still beyond the expected, and with a tendency to favour men for several reasons related to the low illiteracy rate among males; the high educational enrolment rates for males, especially in the 15-19 years age group; and the short survival duration of females in the labour market. Moreover, according to data from the Labour and Unemployment Survey for 2007, the work of females is concentrated in the areas of education (41%), health and social work (15%) and manufacturing (8%).

The phenomenon of unemployment within the context of the Jordanian economy is considered among the most important problems facing the Jordanian economy. This problem exacerbated in the last period as a result of several factors, most important of which are: the demographic changes that led to the increase in the number of new participants to the labour market as a result of the increase in population growth; poor harmonization between the outputs of education at its different stages and the requirements of the labour market; competition between foreign labour and local Jordanian labour in some professions and disciplines as a result of the great disparity in wages between the two parties; reducing the public sector and the employment of Jordanians as a result of restructuring policies of the Jordanian economy; as well as shrinking of the Gulf labour markets before the Jordanian labour force, particularly in the early nineties of the last century.

Data indicates that unemployment is concentrated among females with an educational qualification of a diploma, bachelor's degree or higher, while it concentrates on males with educational levels lower than secondary education.

## 4. THE PROJECTED DEMOGRAPHIC OPPORTUNITY IN JORDAN

The demographic opportunity is determined when the proportion of the work age population is at its highest level and the age dependency ratio is at its minimum. Future population projections for the time period 2007-2050 were implemented in order to determine the time period for arriving at the demographic opportunity in Jordan. In doing so, the year of 2004 was set as the initial base year (baseline) for these projections, which is the year in which the Population and Housing Census was implemented. The use of census data for year 2007 helped in obtaining population properties by age and sex, which is the base year for long term population projections (until 2050) in this document.

As shown in Appendix 1, the projections used three scenarios describing Jordan's population (Jordanians and non-Jordanians from all nationalities, including Iraqis). These population projections were based on a set of assumptions or general inputs shown in Appendix 2.

The implemented population projections indicate that, according to the second scenario, the demographic opportunity in Jordan - as measured by the level of the work age population percent and the level of age dependency ratio - will start to take effect by year 2030. Results of the third scenario get close to the second scenario, but do not get exactly to the same level.

According to the first scenario, the proportion of the work age population will increase slightly, and then return to its former level. Similarly, the age dependency ratio will decrease slightly and then return to its previous higher level. Therefore, according to the first scenario, the demographic opportunity will not be realized in the future (Table 2).

By carefully considering the second scenario (demographic opportunity scenario), it becomes clear that the proportion of the work age population will rise to 69% and for the first time in 2030. In addition, the dependency ratio will decrease for the first time to about 45 per hundred individuals in the working age. This will be achieved if the total fertility rate continued to decrease, as targeted by the National Agenda, after year 2017 reaching the replacement level 2.1 expected child per woman in reproductive age in 2030, and as explained previously, will continue at this level thereafter. In addition, the dependency ratios will fall according to the third scenario, but will remain slightly higher than it is in the second scenario – the demographic opportunity scenario.

Table (2) Percent of Work Age Population (15-64 years) and Dependency Ratio According to the Three Scenarios						
Year	First Scenario (3.6 Child 2030)	Second Scenario (2.1 Child 2030)	Third Scenario (2.1 Child 2040)	First Scenario (3.6 Child 2030)	Second Scenario (2.1 Child 2030)	Third Scenario (2.1 Child 2040)
	% Work Age Population			Dependency Ratio (per 100 Work Age Individuals)		
2007	60.34	60.34	60.34	65.7	65.7	65.7
2010	61.19	61.42	61.42	63.4	62.8	62.8
2015	61.76	63.19	63.19	61.9	58.3	58.3
2020	61.78	65.38	65.34	61.9	52.9	53.0
2025	61.75	67.51	67.28	61.9	48.1	48.6
<b>2030</b>	<b>62.02</b>	<b>69.01</b>	<b>68.42</b>	<b>61.2</b>	<b>44.9</b>	<b>46.2</b>
2035	62.09	69.14	68.34	61.1	44.6	46.3
2040	61.90	68.90	68.30	61.5	45.1	46.4
2045	61.40	68.39	68.24	62.9	46.2	46.5
2050	60.79	67.88	68.00	64.5	47.3	47.1

Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

Predicting the demographic opportunity to occur in year 2030, or using this year as a point of reference, is justified by the attainment of the age dependency ratio its lowest level ever (45), and for the first time in Jordan, during that year. In addition, the proportion of the work age population will also peak (69 %) during that year, which will then start to gradually decline as of 2040, when the age dependency ratio will start to rise again (Table 2), because the rates of the elderly population will start to increase as well. In general, the demographic opportunity is expected to last for two decades, while noting that the timing of this opportunity's occurrence and its duration depend on the pace of reduction in the total fertility rate over the coming years.

## 5. EXPECTED EFFECTS OF THE DEMOGRAPHIC OPPORTUNITY

Population changes by each scenario and their impact on population size, growth, structure, age distribution, dependency ratio, education and labour market, were examined in order to identify the effects of the projected population changes, which result from low fertility levels in the future. Following are some differences expected between the three scenarios and the implications of future demographic changes, while taking into account all of Jordan's population (Jordanians and non-Jordanians).

### 5.1 THE DEMOGRAPHIC OPPORTUNITY AND POPULATION SIZE AND GROWTH

When focusing merely on the Jordanian population, i.e. excluding non-Jordanians of all nationalities (Table 3 a), the expected population size, according to the first scenario, will reach 8.95 millions in 2030, compared with about 7.8 millions in the second and third scenario. These results show a reduction by about 1.2-1.3 millions in the expected population size when excluding the population of other nationalities. In other words, results of population projections indicate that Jordan's population size will be larger, where it will exceed ten millions (10.3) in 2030, should the assumptions made for the first scenario come true. Furthermore, the size of the population will reach 9 millions for the same year in the event that the assumptions of the second or third scenarios are realized (Table 3 b), i.e. between now and 2030, the population will increase by an annual growth rate of 2.41% according to the first scenario, compared with 1.8%, according to the second scenario. As for the results of the third scenario, the population size and the annual growth rate will increase slightly more than the results of the second scenario.

In general, there is a difference between the first scenario, on one hand, and the second and third scenarios on the other hand, whereby the difference in population size will reach about 1.4 million in 2030. Furthermore, in 2050, the difference in population size between the first and second scenarios will reach 4.6 million. Undoubtedly, the differences in the population number, as well as in its growth rates, will result in numerous and significant differences in the economic and social costs.

The difference in the results shown in Table (3a) and Table (3b), in relation to Jordan's population number, is due to the exclusion of the non-Jordanian population in Table (3a). Excluding non-Jordanians from the analysis, including Iraqis, is useful for comparison purposes. However, this exclusion does not eliminate the non-Jordanian population from the consumers' ring of Jordan's scarce resources, such as water, or from the mass users of its social services such as education, health as well as whatever consequences their presence befalls upon the expansion of infrastructure and others.

<b>Table (3a) Jordanian Population Size (only Jordanians) According to the Three Scenarios by Selected Years</b>			
<b>Year</b>	<b>First Scenario (3.6 child per woman) 2030</b>	<b>Second Scenario (2.1 child per woman) 2030</b>	<b>Third Scenario (2.1 childper woman) 2040</b>
2007	5,167,448	5,167,449	5,167,449
2010	5,570,243	5,548,036	5,548,037
2015	6,320,563	6,169,382	6,169,382
2020	7,147,250	6,731,425	6,735,589
2025	8,024,705	7,268,965	7,295,370
<b>2030</b>	<b>8,947,802</b>	<b>7,772,338</b>	<b>7,842,565</b>
2035	9,935,674	8,261,578	8,369,690
2040	11,008,571	8,723,542	8,843,274
2045	12,172,814	9,126,058	9,251,498
2050	13,426,594	9,458,999	9,602,043
Annual Population Growth Rate 2007-2030 <sup>11</sup>	2.39%	1.77%	1.81%

Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

<b>Table (3b) Jordanian Population Size (all Nationalities) According to the Three Scenarios by Selected Years</b>			
<b>Year</b>	<b>First Scenario (3.6 child per woman) 2030</b>	<b>Second Scenario (2.1 child per woman) 2030</b>	<b>Third Scenario (2.1 child per woman) 2040</b>
2007	5,892,740	5,892,741	5,892,741
2010	6,357,248	6,331,703	6,331,704
2015	7,223,484	7,049,318	7,049,318
2020	8,179,292	7,700,125	7,704,928
2025	9,195,394	8,324,068	8,354,556
<b>2030</b>	<b>10,264,480</b>	<b>8,908,474</b>	<b>8,989,596</b>
2035	11,407,883	9,476,018	9,600,896
2040	12,649,570	10,012,652	10,150,933
2045	13,997,503	10,482,157	10,627,027
2050	15,450,120	10,872,657	11,037,860
Annual Population Growth Rate 2007- 2030 <sup>12</sup>	2.41 %	1.80 %	1.84 %

Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

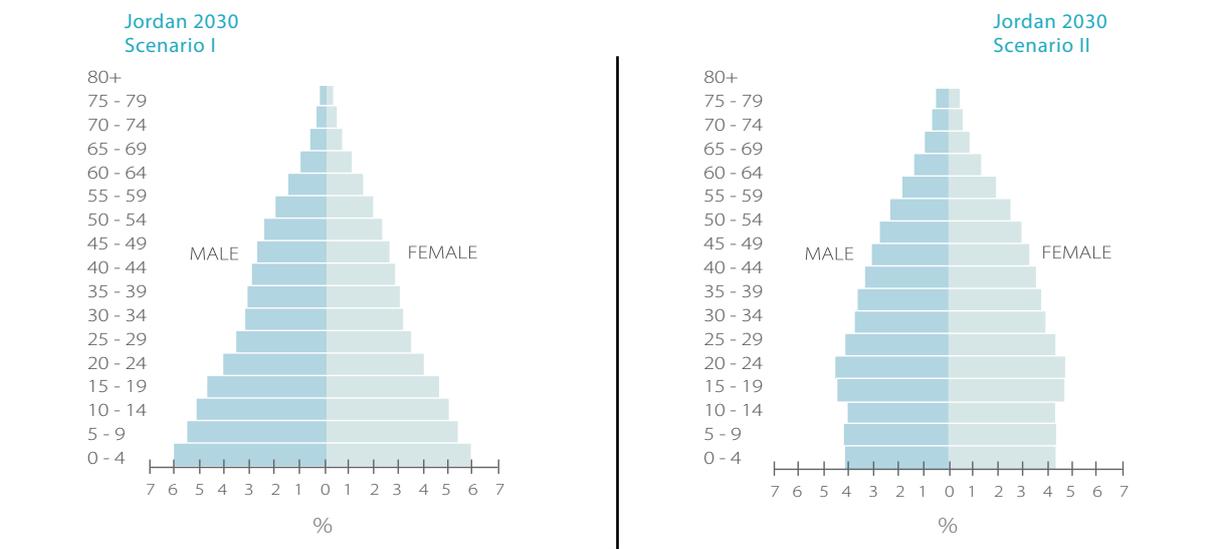
<sup>11</sup> Due to the long period of time, the annual population growth rate was calculated using the exponential equation for population change.

<sup>12</sup> Due to the long period of time, the annual population growth rate was calculated using the exponential equation for population change.

## 5.2 THE DEMOGRAPHIC OPPORTUNITY AND THE POPULATION AGE STRUCTURE

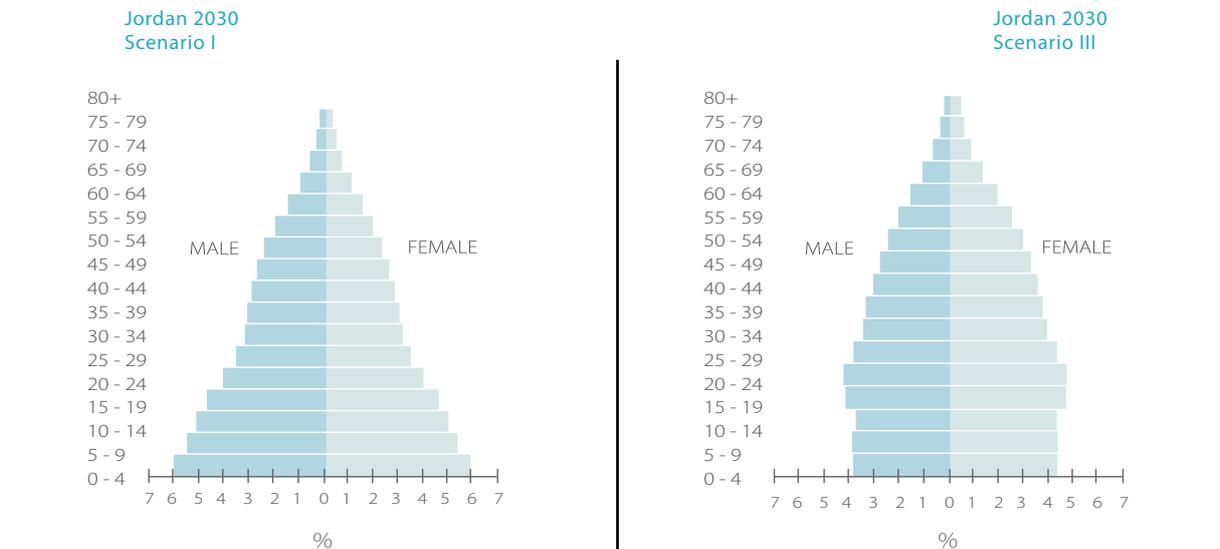
Change associated with the demographic opportunity, is considered among the most important characteristics of demographic transition. The change in the age structure, which results from the demographic opportunity, is mainly witnessed in the high proportion of youth and adults on the account of the proportion of children and elderly. Figure (4a) compares the population pyramid for two scenarios I and II, while Figure (4b) compares these pyramids for scenarios I and III for year 2030, which is the year when the opportunity is expected to peak. The change in the population age structure is evident in the second scenario and to some extent in the third scenario. It can also be noted that the population pyramid's base shrinks (the first three horizontal columns at the bottom of the pyramid) in the second scenario, which indicates a low percent of children as compared to the population pyramid for the first scenario. In addition, the percent of the youth and adults, which is represented by horizontal columns in the centre of the pyramid, increase.

**Figure (4a) Comparison of Population Pyramids for Year 2030 According to First and Second Scenario**



Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

**Figure (4b) Comparison of Population Pyramids for Year 2030 According to First and Third Scenario**



Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

Change in the population age structure is associated primarily with the size of the different age groups especially children under the age of fifteen, young people, the rest of the population who are in the working age, as well as the proportion of the elderly. This change is reflected on the dependency ratio and on the needs and requirements of these age groups in relation to education, health, water, housing and opportunities work and others.

Table (4) shows population estimates from all nationalities in these age groups for selected years until year 2050, according to scenarios I and II. Results for the third scenario are not shown because they do not differ significantly from those of the second scenario, because as expected, the percent of the 0-24 age group in the third scenario is slightly higher than that of the second scenario, with similar results for the remaining age groups. Alternatively, Table (5a+5b) display detailed information on the percent and number of children (0-14 years) and elderly (65 years and over) for the entire population of all nationalities, for both scenarios and for similar years.

It is clear from Table (4) that the difference in population size in these age groups, between scenario I and II, is evident among the younger age groups in the short term, and that such a difference is delayed in appearance among the older age groups. Furthermore, such a difference fails to appear among the age groups 40 years and above, not even in year 2050 because the projections are for 43 years (from 2007 to 2050). It can also be noticed, that from 2007 to 2030 the number of children will increase by 60% in the first scenario, compared with 6% in the second scenario. This difference is very significant and means a lot in respect to the needs of this young age group. With time, this difference grows intensely to become (130% versus 10%) when moving towards the middle of this century. As for the corresponding figures for teenagers and young people (15-24 years), for the two scenarios, the results are 46% and 32% respectively until year 2030, and 117% and 27% until year 2050.

As for the older aged segments, data does not show a clear difference between the two scenarios in the 25-39 years age group until after 2030 (143% versus 79% in 2050). No clear differences are shown between the two scenarios in the older age group (40 years and above) across all years in the future. In addition, after excluding the non-Jordanians, Table (4) shows the size of the four age groups in year 2030 and 2050. These results were presented for comparative purposes, where the effect of this exclusion on the reduction in population numbers for all the four age groups, and for both scenarios can be noticed.

**Table (4) Population Size by Age Group According to First and Second Scenarios**

Year	Less than 15 years		15-24 years		25-39 years		40 years and above	
	First Scenario	Second Scenario	First Scenario	Second Scenario	First Scenario	Second Scenario	First Scenario	Second Scenario
2007	2,134,320	2,134,321	1,255,637	1,255,637	1,384,840	1,384,840	1,117,944	1,117,944
2010	2,237,924	2,213,368	1,328,871	1,328,583	1,512,055	1,511,510	1,278,398	1,278,241
2015	2,491,208	2,323,921	1,416,116	1,414,138	1,737,600	1,733,870	1,578,561	1,577,389
2020	2,812,177	2,352,010	1,485,352	1,479,905	1,954,877	1,944,592	1,926,886	1,923,618
2025	3,137,353	2,324,900	1,610,444	1,576,248	2,118,085	2,099,372	2,329,513	2,323,548
<b>2030</b>	<b>3,408,442</b>	<b>2,271,779</b>	<b>1,834,668</b>	<b>1,653,753</b>	<b>2,252,994</b>	<b>2,223,862</b>	<b>2,768,376</b>	<b>2,759,080</b>
2030 Jordanians only	3,031,012	2,006,252	1,567,055	1,416,361	1,863,813	1,863,798	2,485,922	2,485,927
2035	3,685,405	2,285,330	2,082,246	1,629,422	2,413,699	2,347,994	3,226,532	3,213,272
2040	4,022,113	2,316,931	2,279,836	1,587,595	2,685,902	2,464,514	3,661,720	3,643,611
2045	4,440,652	2,351,140	2,456,607	1,583,184	3,025,860	2,497,590	4,074,384	4,050,243
<b>2050</b>	<b>4,917,497</b>	<b>2,353,129</b>	<b>2,658,797</b>	<b>1,597,879</b>	<b>3,371,368</b>	<b>2,474,624</b>	<b>4,502,458</b>	<b>4,447,025</b>
2050 Jordanians only	4,373,000	2,070,163	2,256,078	1,339,659	2,763,377	2,036,951	4,034,139	4,012,226
% Δ 2007- 2030*	60	6	46	32	63	61	148	147
% Δ 2007- 2050*	130	10	117	27	143	79	303	298

Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

\* Refers to the relative change in the size of these populations since 2007, and until that year.

### 5.3 THE DEMOGRAPHIC OPPORTUNITY AND THE CHILDREN

Projections indicate that during the course of the demographic opportunity, and as we approach the year 2030, the percent of children under the age of fifteen will decline and reach about a quarter of Jordan's population (25%). As shown in Table (5a), this percent will decline further according to the second scenario as opposed to 33% in the first scenario. Table (5b) shows the numbers of these population groups. The decline in the percent of children (25% or less) expels Jordan's population age structure from being dominated mainly by an underage population to a youth society, while staying away from an aging society, which is currently characterized by a low percent of children, less than 20%, and close to the percent of the elderly.

If analysis was to be restricted to only Jordanians, the percent of children in Jordan do not change much because the percent of Iraqi children is high and close to that of the Jordanians. However, this percent is very low among residents from other nationalities, due to the fact that Iraqis, considered in this study, are mostly from families with a range of ages, or because the study assumed that the age structure of the Iraqi population is similar to that of the Jordanians, while those of other nationalities are usually workers in their prime life, and therefore the low percent of children amongst them does not affect the percent of children in Jordan. This disparity between the percent of Iraqi children and others balance each other in its effect on the dependency ratios among the population of Jordan as a whole.

### 5.4 THE DEMOGRAPHIC OPPORTUNITY AND THE ELDERLY

Results of the projections shown in Table (5a) indicate that the percent of the elderly people (65 years and above) during the course towards the demographic opportunity will rise gradually and go beyond 5% as we approach 2030, especially in the second scenario. This is because those individuals who will enter into old age in Jordan, from now until mid-century Table (5b) were already born and their numbers are already known and are not affected by the fertility levels in the next half century. However, their percent will be affected only in the Jordanian society, where it will increase in the coming decades, primarily as a result of the decline in the percent of children, due to the previously discussed decline in fertility levels according to the second and third scenario, while noting the inverse relationship between the percent of children and the percent of elderly.

Even if the percent of elderly increase in the next four decades in Jordan, the dependency ratio will continue to decline for a long time, due to the previously discussed continued decline in the percent of children to low levels. Moreover, despite the high percent of the elderly population, Jordan will remain outside the aging population definition, until the end of the forties of this century, because the percent of elderly in Jordan will remain below 10% of its total.

The percent of the non-Jordanian elderly among Jordan's population is that of the Iraqis, which is close to the percent of this age group among Jordan's population, including all nationalities and in all years and scenarios. However, this percent is very low among Jordan's population that is from other nationalities. This is due to the fact that exodus of Iraqis was in a fashion that embraced whole families or due to the assumption adopted by the study which hypothesized a symmetry between the age structure of the Iraqis and Jordanians. Furthermore, migration of other nationalities is mainly made up of adults and workers and rarely includes elderly immigrants, therefore excluding them from the analysis does not change much in the percent of the elderly in the Jordanian society.

**Table (5a) Percent of Children and Percent of Elderly According to the First and Second Scenarios**

Year	Percent of Children (less than 15 years)		Percent of Elderly (65 years and above)	
	First Scenario (3.6 child 2030)	Second Scenario (2.1 child 2030)	First Scenario (3.6 child 2030)	Second Scenario (2.1 child 2030)
	%	%	%	%
2007	36.22	36.22	3.44	3.44
2010	35.20	34.96	3.61	3.62
2015	34.49	32.97	3.75	3.85
2020	34.38	30.55	3.84	4.07
2025	34.12	27.93	4.13	4.56
<b>2030</b>	<b>33.21</b>	<b>25.50</b>	<b>4.77</b>	<b>5.49</b>
2035	32.31	24.12	5.60	6.74
2040	31.80	23.14	6.30	7.96
2045	31.72	22.43	6.88	9.18
2050	31.83	21.64	7.38	10.48

Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

**Table (5b) Number of Children and Number of Elderly According to the First and Second Scenarios**

Year	Number of Children (less than 15 years)		Number of Elderly (65 years and above)	
	First Scenario (3.6 child 2030)	Second Scenario (2.1 child 2030)	First Scenario (3.6 child 2030)	Second Scenario (2.1 child 2030)
	2007	2,134,320	2,134,321	202,664
2010	2,237,924	2,213,368	229,442	229,447
2015	2,491,208	2,323,921	217,167	271,134
2020	2,812,177	2,352,010	313,774	313,675
2025	3,137,353	2,324,900	380,006	379,824
<b>2030</b>	<b>3,408,442</b>	<b>2,271,779</b>	<b>489,584</b>	<b>489,301</b>
2035	3,685,405	2,285,330	639,371	638,961
2040	4,022,113	2,316,931	797,259	796,695
2045	4,440,652	2,351,140	962,551	961,794
2050	4,917,497	2,353,129	1,140,175	1,139,180

Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

## 5.5 THE DEMOGRAPHIC OPPORTUNITY AND THE YOUTH

The age group 15-39 years constitutes the majority of the Jordanian labour force participating in economic activities, where according to the 2007 Labour and Unemployment Survey about half of the unemployed are concentrated in the age group 15-24 years and about half of the overall unemployed population are females in the age group of 25-39 years<sup>13</sup>.

Table (6) shows the expected change in the numbers of youth in the age of higher education and in the early years of entering the labour market 18-30 years and in accordance with the scenarios I and II. Results of the third scenario were not displayed, because they are similar to results of the second scenario until 2030 and very close to them thereafter. Projection results in this table also indicate that Jordan will face a growing number of this population category, which is the core group of students going to community colleges and universities, as well as the new entrants to the labour market. In general, between 2007 and 2030, the number of individuals in the 18-21 years age category will increase according to the first scenario by 45%, compared with a 33% increase for the second scenario between the years 2007-2030. However, the difference between these two scenarios will be noticeable by year 2050, when between 2007 and 2050; the number of individuals in this category will increase by 110 % in the first scenario, compared to 27% in the second scenario.

Furthermore, the difference between the two scenarios in the number of individuals aged 22-24 years and those aged 25-30 years become evident after 2030, where the growth in these numbers is noted to be almost identical in the scenarios until that year. However, according to the first scenario, the number of individuals aged 22-24 year will rise between 2007 and 2050 by 166%, compared to only 36% in the second scenario, while the corresponding data for the older age category 25-30 years, for the same period, are 132% according to the first scenario, compared to 56%, according the second scenario.

**Table (6) Number of Individuals in the Age of Higher Education and in the Early Years of Entering the Labour Market According to the First and Second Scenarios**

Year	18-21 Years		22-24 Years		25-30 Years	
	First Scenario	Second Scenario	First Scenario	Second Scenario	First Scenario	Second Scenario
2007	503,793	503,793	363,865	363,865	641,228	641,228
2010	534,287	534,171	388,600	388,456	701,501	701,220
2015	568,109	567,120	429,223	428,241	790,263	788,347
2020	590,967	589,595	450,027	446,968	867,222	861,937
2025	637,867	631,416	472,886	468,333	910,053	900,437
<b>2030</b>	<b>732,786</b>	<b>668,718</b>	<b>518,459</b>	<b>505,411</b>	<b>960,917</b>	<b>946,263</b>
2030 Jordanians only	625,606	572,897	421,437	416,515	777,737	778,015
2035	836,773	652,712	604,505	526,967	1,061,496	1,015,726
2040	913,537	632,531	675,977	500,960	1,228,997	1,047,449
2045	981,479	632,566	734,384	501,141	1,370,247	1,002,771
<b>2050</b>	<b>1,059,958</b>	<b>637,416</b>	<b>788,218</b>	<b>496,345</b>	<b>1,486,242</b>	<b>999,094</b>
2050 Jordanians only	898,951	534,146	636,408	394,749	1,194,952	797,887
% Δ 2007- 2030*	45	33	42	39	50	48
% Δ 2007- 2050*	110	27	166	36	132	56

Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

\* Refers to the relative change in the size of these populations since 2007, and until that year.

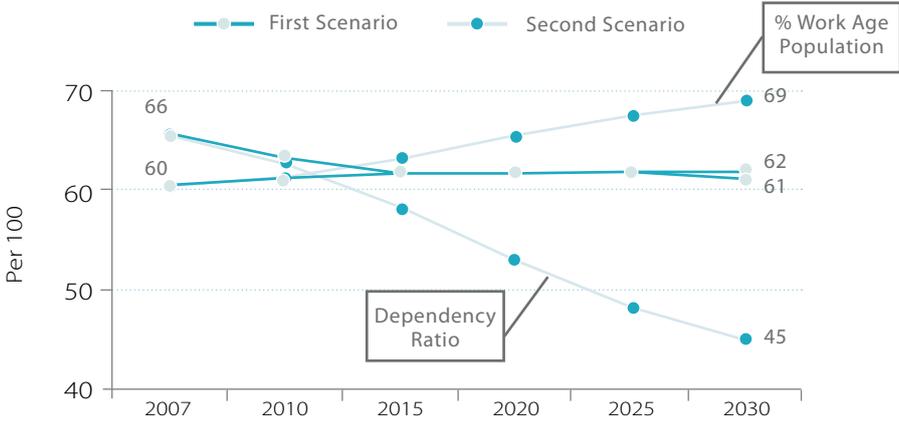
<sup>13</sup> Department of Statistics, Analytic Report for Annual Results of the Employment and Unemployment Survey, 2007, February 2008.

Table (6) also shows the size of all age groups in 2030 and 2050, when excluding non-Jordanians. These results were presented for comparative purposes, where the effect of this exclusion on the numbers of the population in all age groups and in both scenarios in the two years, can be noted. This result can be applied on all the other years as well.

**5.6 THE DEMOGRAPHIC OPPORTUNITY AND THE DEPENDENCY RATIO**

As noted earlier, there will be a difference between the two scenarios in the population size of about 1.4 millions by year 2030. In addition, there will be a difference in the percent of the working-age population and the dependency ratio, where the demographic opportunity will contribute to alleviating the burden of dependency, especially when it reaches its peak and according to the second scenario, the percent of the population in the working age increase from about 60% to about 69% and dependency ratio decrease from 66 to 45 in 2030, as shown previously in Table (2) and in Figure (5) below. Consequently, according to the second scenario, the dependency ratio remains low even after 2040, compared to its value at the beginning of the century, despite slightly increasing due to the start in the decline in the percent of the work age population as a result of a simple increase in the percent of the elderly. Figure (5) below clearly shows the effect of the window of opportunity on the dependency burdens, where according to the first scenario, the percent of the work age population and dependency remain virtually unchanged, while in the second scenario (opportunity scenario), the percent of the work age population increase and the dependency ratios decrease dramatically.

**Figure (5) Percent of Work Age Population and Dependency Ratio According to First and Second Scenarios**



Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

If analysis was to be restricted to the percent of the work age population and dependency ratios among Jordanians only, i.e. by excluding non-Jordanians, the results do not change much, because, as expected, these indicators are almost similar for both Jordanians and Iraqis. However, results are different in relation to the other non-Jordanian groups, and excluding the non-Jordanian group from the final analysis slightly inflates the levels of dependency in Jordan, given its small size.

**5.7 THE DEMOGRAPHIC OPPORTUNITY AND EDUCATION**

Based on the previously indicated differences in the percent of children and their numbers between the two scenarios, which in turn is reflected directly on the number of those in the general education age category (Table 7), the differences, between the two scenarios<sup>14</sup>, in the numbers of kindergarten-age children appear immediately as of 2010; Although these differences are relatively slight, they will intensify to reach more than 166 thousand children in 2030, and more than 375 thousand in 2050. Accordingly, the number of pre-school children (kindergarten) will increase by 65% by 2030 and by 141% by 2050, according to the first scenario, compared to 7-10% only for the respective years, according to the second scenario.

<sup>14</sup> Results of the third scenario are not displayed because they tend not to differ from the second scenario.

Peaking in 2030, the differences between the two scenarios, in the number of individuals at the age of basic education, begin to appear after 2013 with a difference of about 629 thousand students in 2030 and about one and a half million students in 2050. Accordingly, the number of those in the age of basic education will increase by 56% by 2030 and by 121% by 2050, according to the first scenario, against an increase that ranges from 11% to 14% only, for the same period according to the second scenario.

Furthermore, the differences, between the two scenarios, in the number of individuals at the age of secondary education, are late in emerging until after 2020, because those who are born today will only reach the age of secondary education after 16 years from 2007. These differences reach about 63 thousand students by 2030 and 226 thousand by 2050 (Table 7). Therefore, according to the first scenario, the number of individuals at the age of secondary education will increase by 50% by 2030 and by 109% by 2050, compared to a mere increase of 20% to 26% for the same years under the second scenario. No results are displayed for the third scenario, as results in the short term tend not to differ from those of the second scenario, and differences between them in the long term is minimal as well.

**Table (7) Expected Numbers of Individuals in the Age of Kindergarten (4-5 years), Basic Education (6-15 years) and Secondary (16-17 years) According to the first and second scenarios**

Year	Kindergarten		Basic Education		Secondary Education	
	First Scenario	Second Scenario	First Scenario	Second Scenario	First Scenario	Second Scenario
2007	286,131	286,131	1,371,877	1,371,877	256,533	256,533
2015	348,690	323,452	1,507,103	1,492,746	278,302	278,045
2020	405,568	318,689	1,704,575	1,576,834	293,797	293,201
2025	439,417	298,222	1,947,809	1,569,039	327,700	316,741
<b>2030</b>	<b>471,883</b>	<b>305,718</b>	<b>2,145,888</b>	<b>1,516,984</b>	<b>385,246</b>	<b>322,417</b>
2030 Jordanians only	418,517	268,818	1,915,632	1,348,009	343,032	286,830
2035	507,936	303,076	2,313,300	1,503,962	424,245	299,712
2040	559,241	315,101	2,495,364	1,510,585	457,620	303,844
2045	622,875	319,041	2,735,350	1,546,987	490,222	299,061
<b>2050</b>	<b>690,370</b>	<b>313,461</b>	<b>3,033,995</b>	<b>1,567,506</b>	<b>535,378</b>	<b>308,883</b>
2050 Jordanians only	612,869	274,397	2,707,311	1,389,346	475,405	273,014
% Δ 2007-2030*	65	7	56	11	50	26
% Δ 2007-2050*	141	10	121	14	109	20

Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

\* Refers to the relative change in the size of these populations since 2007, and until that year.

Table (7) also display the size of all population groups, who are of school age in the years 2030 and 2050, upon excluding non-Jordanians from the projections and limiting them to Jordanians. These results were presented for comparative purposes, where the effect of this exclusion can be noted in the modest decline in population numbers at the age of education at all levels, in both scenarios and in those two years. This can be applied to result to all other years as well.

## 5.8 THE DEMOGRAPHIC OPPORTUNITY AND THE LABOUR MARKET

Percent estimates for the work age population were displayed previously, but not all this population will be in the economically active category, as a large proportion of them will be full-time students or housewives, where statistical data indicate that 29.8% of individuals who are economically inactive are students and 53.9% are housewives<sup>15</sup>. Furthermore, and in order to complete the picture of the economic impacts of the demographic opportunity, estimates for the levels of change in the size of the labour force and the number of new jobs that need to be developed yearly by the Jordanian economy in order to absorb new entrants into the labour market, without taking into account the jobs needed to absorb the currently unemployed whose numbers have piled up from previous years, were done.

Given the considerable variation in the rates of male and female participation in the labour force, separate gender consideration should be taken into account when estimating the size of the labour force and the volume of employment opportunities that need to be developed. Therefore, estimates were implemented based on the results of the Labour and Unemployment Survey for the years 2006 and 2008. In addition, this report uses the technique prepared by the United Nations, in implementing future projection rates of economic participation, according to the population age 15-64 years<sup>16</sup> and for the time period 2008-2050.

Table (8) displays the size of the labour force and the employment opportunities expected to be developed, assuming a constant rate of unemployment manifested in 2008. Analysis in this document will be limited on the comparison of results from the first and second scenarios (scenario of the demographic opportunity), and will not address the third scenario, because the results of the latter are close to those of the second scenario, whereby a significant increase is noted in the size of the labour force in 2030. Thus according to the first scenario, the size of the labour force will double by nearly 1.9 times during 2030, compared with its size in 2008, and will reach three times its size of 2008 in year 2050. Consequently, the Jordanian economy will bear a heavy burden in creating new job opportunities for new entrants to the labour market, due to the increase in the size of the labour force in the future. In addition, the volume of employment opportunities that is expected to be developed will increase, assuming a steady unemployment rate as well as a stability of the Jordanian economy performance in 2008, to about 133 thousand jobs in 2030, according to the first scenario, and to 130 thousand jobs, according to the second scenario. Therefore, the volume of jobs created will increase substantially as Jordan approaches the end of the projection period, where as shown in Figure (6), this volume is expected to reach about 216 thousand jobs, according to the first scenario, and about 169 thousand jobs, according to the second scenario. It can be further noticed, that the volume of employment that is expected to be developed between 2030 and 2050, will double compared to the size of jobs expected to be developed between 2008 and 2030. Hence the Jordanian economy is expected to introduce about 71 thousand jobs between 2008 and 2030, compared to about 149 thousand jobs between 2030 and 2050.

As previously noted, the impact of the decline in fertility level on the work force does not appear immediately, but gets delayed until the children grow up and start to enter the workforce as actual employees or as job seekers (the unemployed). The differences between the two scenarios, with regard to employment opportunities needed to be develop, are noticed to be minimal in the early years, and start to appear late in a gradual manner while growing with time. In general, the expected number of jobs needed to absorb new entrants into the labour market is noticed to increase, where in 2030 and according to the first scenario, the size of these jobs will double that of 2008. Conversely, the number of new jobs to be

<sup>15</sup> Department of Statistics, Analytic Report for Annual Results of Employment and Unemployment Survey for the year 2007.

<sup>16</sup> The Jordanian Labor Law specifies the age of 16 years, as the minimum age for enrolling in the labor market.

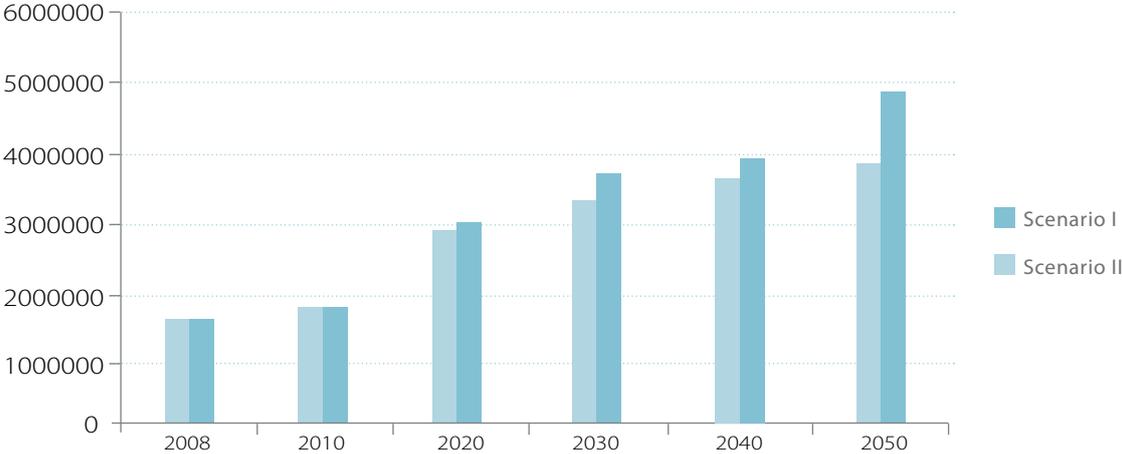
created in 2030 will increase by 86%, according to the second scenario. In other words, the demographic opportunity does not require the creation of new jobs each year, in the same amount that it is required by the first scenario, because of the decline in the percent of children who will later on form the future work force, which accompanies the demographic opportunity. However, according to the first scenario, job opportunities to be created are expected to grow by 208% of its volume in 2008, while their number will rise by 141% in the second scenario, thus easing off the pressure on the labour market. Undoubtedly, the disparity in the number of jobs expected to be created, according to both scenarios, and their decrease according to the second scenario, clearly indicate the substantial impact of low fertility rates.

**Table (8) Size of the Labour Force and the Number of Jobs Expected to be Created According to the First and Second Scenario**

Year	Size of Labour Force			Number of Jobs to be Created		
	First Scenario	Second Scenario	Difference in Size of Labor Force	First Scenario	Second Scenario	Difference in Size of Job Opportunities
2008	1567898	1567819	79	70000	70000	-
2010	1687305	1686806	499	75331	75313	18
2016	2063062	2058484	4578	92107	91907	200
2020	2316278	2306309	9969	103412	102972	440
2026	2699608	2673420	26188	120526	119363	1163
<b>2030</b>	<b>2979128</b>	<b>2917332</b>	<b>61796</b>	<b>133005</b>	<b>130253</b>	<b>2752</b>
2036	3461106	3249481	211625	154524	145083	9441
2040	3823607	3434109	389498	170708	153326	17382
2046	4413733	3662488	751245	197054	163523	33531
2050	4841141	3790943	1050198	216136	169258	46878

Source: The Higher Population Council, Population Projections for 2007-2050 using Spectrum DemProj Model

**Figure (6) Labour Force Projections (15-64) for Selected Years**



## 6. POLICIES FOR ACHIEVING AND INVESTING IN THE DEMOGRAPHIC Opportunity

Population issues are related to and affect economic and social circumstances, sectors and various plans. There is a range of policies and strategies in various fields, adopted in Jordan, such as Reproductive Health/ Family Planning, education, higher education, investment, economy, human resources, employment, training and vocational and technical education, etc.. In addition, the National Agenda for the years (2006 -2015) focuses on all these issues while providing long-term vision for the future. Consequently, by avoiding general and comprehensive actions, this part of the document aims at reviewing the proposed policies for the demographic opportunity, by highlighting the themes of direct relevance to the demographic opportunity. This is done through a series of policies that are distributed by three main areas: policies to accelerate the demographic shift and the reach the period of «demographic opportunity» through investment in the health policies by increasing the effectiveness and the efficiency of Reproductive Health / Family Planning programs; policies to invest in education and higher education in order to improve the quality of education as well as its different levels and patterns; policies to improve women's economic and social situation by increasing their participation in the labour market and reducing the gender gap in this area; policies to profit from the benefits of the demographic opportunity through policies that include the development of the labour market in order to take advantage of current opportunities; policies for economic openness in order to achieve high economic growth rates; policies to attract and motivate domestic and foreign investment as the key for creating new job opportunities. In addition, it is important to have social protection policies that act on protecting the community from the negative impacts of the demographic opportunity, in case of not achieving optimal benefit from it, by developing community empowerment programs and ensuring their sustainability. Finally, social protection policies, and preparation for the post-demographic opportunity in order to ensure a supportive environment at various levels for the elderly group are included. The proposed policies are presented in details according to each stage as follows:

### 6.1 POLICIES TO ACCELERATE THE DEMOGRAPHIC SHIFT AND REACH THE DEMOGRAPHIC OPPORTUNITY PERIOD

#### 6.1.1 Policies for Investing in Health

- Achieve targeted fertility rate of 2.1 births per woman in 2030, passing through the fertility rate of 2.5 in year 2017 according to recommendations of the National Agenda.
- Increase the effectiveness and efficiency of reproductive health / family planning programs.
- Raise awareness and advocate population issues and their relationship with Reproductive Health / Family Planning at the level of policy makers, decision makers and civil society.
- Ensure coordination between the relevant parties concerned with awareness raising issues of Reproductive Health / Family Planning, taking into account adherence to the teachings of Islamic law and the impact of customs and traditions.
- Promote healthy behaviours among youth and adolescents.

The policies addressed by the National Agenda document for years (2006-2015)<sup>17</sup> through its various executive programs<sup>18</sup> in the health field are:

- Reduce the population growth rate.
- Ensure equity in accessing health service, including reproductive health services.
- Strengthen partnership between the health sectors.
- Provide health insurance coverage for Jordanians.

<sup>17</sup> The National Agenda for Years 2006-2015, First Volume.

<sup>18</sup> The Executive Program for the National Agenda for Years (2007-2009) and (2009- 2011).

### 6.1.2 Policies for Investing in Education and Higher Education

- Increase awareness in the educational institution in reproductive health and family planning issues and the importance of investing in the demographic opportunity and expanding the integration of population related concepts in educational curricula and training programs.
- Speed up the procedures for establishing the Higher Council for the Development of Human Resources to ensure control and quality management in educational institutions in order to improve the quality and patterns of education at all levels.
- Develop policies for acceptance into higher education programs, including conditions and quality standards to ensure rationalization of higher education and the quality of its output.
- Promote means of education and educational guidance, including the use of relevant information technology, within the education systems and beyond, in order to help students enrolled in secondary and higher education choose learning pathways that matches their abilities and in harmony with the requirements of development, as well as assist graduates of various levels of education in joining the labour market.
- Develop Research & Development activities within various stages of education, particularly with regard to population issues.

**The policies addressed by the National Agenda document for the years (2006-2015) through its various executive programs in the field of education and higher education are:**

- Continue the provision of educational opportunities for all students in the school age and pursuing of universal basic education for all as well as elimination of disparities in educational opportunities.
- Activate women's participation and achieve gender equity in policies, curricula and programs of different sectors of education.

### 6.1.3 Policies to Improve Women's Economic and Social Status

- Develop a plan with a time frame to ensure greater participation of women in the labour market and activate support services to enable women to combine family obligations with work responsibilities and participation in public life.
- Eliminate discrimination in employment against women in order to increase their share in the available labour force.

## 6.2 POLICIES TO BENEFIT FROM THE PROCEEDS OF THE DEMOGRAPHIC OPPORTUNITY

The demographic opportunity involves a significant increase in the size of the labour force and savings. Therefore the economy should create the appropriate environment of policies to benefit from this increase for the sake of driving the economic growth momentum in order not to turn the increase in the size of the labour force into an enormous burden represented in high unemployment rates, and their negative impact on both the economic, social and political stability.

In this context, a number of indicators that can help achieve economic growth and the employment and accommodation of the growing number of working groups, were outlined in Appendix (3). The following present the required policies to achieve these indicators in order to take advantage of positive returns of the demographic opportunity, while taking into account improving social protection and building a social network to address any imbalances that may be associated with population change and economic growth:

### 6.2.1 Policies to Extend the Labour Market and its Flexibility

- Increase the number of individuals enrolled in training institutions, as well as vocational and technical educational programs, and double the percent of enrolment in all phases of secondary and higher education, so that by year 2013, the proportion enrolled in the post-basic vocational education and training becomes 40% for males and 25% for females, and continue to rise gradually as needed.

- Rationalize and streamline enrolment in secondary and higher education, including university education and education in community colleges in order to ensure an alignment with development needs and the needs of the labour market, particularly with regard to the needs of basic labour levels of skilled workers.
- Encourage the involvement in secondary vocational education as an alternative to academic secondary education.
- Guide traditional and non-traditional education and training systems and programs to increase the contribution of local employment in the labour force.
- Guide education and training systems towards micro-enterprises and small and private projects.
- Implement programs to prepare students, especially after the age of 15, to engage in vocational education and craft specialization and skills.
- Link fields of education to job descriptions and terms of references as well as the skills required for these jobs.
- Promote means of employment and vocational and technical guidance, including the use of relevant information technology services inside and outside the training systems in order to assist those enrolled in vocational training to select professional fields appropriate to their abilities and compatibility with the requirements of the labour market, and provide assistance to graduates of various vocational training fields in seeking employment.
- Work to raise the community's perspective regarding technical work and enhance its status as well as institutions' and staff's perception of it, and present its importance in the performance of the economic system.
- Develop a system of partnership with the private sector to achieve a positive role in policy formulation, and in program development, implementation and evaluation, in addition to contributing to the development of training facilities both quantitatively and qualitatively, for the purposes of training for employment.
- Amend the legislations in order to strengthen the Jordanian national private sector in the targeted economic development.
- Adopt plans and mechanisms for creating new jobs as needed.
- Develop a plan with a time frame to increase the contribution of local employment in the labour force, and rationalize standards and procedures for expatriate labour.
- Support the micro and small business sector by providing funding and technical incentives, and encouraging self-employment and leadership in establishing individual projects.
- Emphasize the need to reform the existing imbalances in the Social Security Act, which may interfere in some way with policies of developing the labour market and maximizing the use of labour. Most important of these imbalances being that of early retirement.
- Develop maternity insurance through the social security in order to overcome the obstacles and problems that face its current application so as to enhance women's participation in the labour market and increase their employment rates.

**The policies addressed by the National Agenda document for the years (2006-2015) through its various executive programs in the field of expanding the labour market and its flexibility are:**

- Improve the quality of education in accordance with the requirements of the knowledge economy.
- Improve the learning environment in universities.
- Develop the scientific research sector.

### 6.2.2 Policies of Economic Openness

- Strengthen the status of the Jordanian products in global markets through international agreements.
- Achieve good and sustainable economic growth rates.
- Strengthen the public administration to be financially stable, transparent and accountable.
- Restructure the public sector to be more productive and effective.
- Transfer Technology.
- Increase the financial resources allocated for scientific research.

**The policies addressed by the National Agenda document for the years (2006-2015) through its various executive programs in the area of economic openness are:**

- Support small, medium, and newly initiated enterprises.
- Raise the efficiency of resource allocation.

### **6.2.3 Policies to Mobilize Savings and Stimulate Investment**

- Improve the investment environment and increase competitiveness.
- Strengthen the role of development areas in order to serve the investment environment (which includes the industrial cities and free zones).
- Stimulate national savings and prepare the business environment and investment environment in order to ensure diversification of direct investment initiatives and maximize their benefits of both gainful employment, and value added from the polarization of departments and advanced techniques.
- Establish legislation and legal frameworks that would expand activity programs for small and medium enterprises and support them to maximize competitiveness and stimulate national exports with high added value in the industry and service sectors within an economy that aims at developing heavy industries.
- Direct investors to invest in the less densely populated areas by activating legislation, securing incentives, and providing an infrastructure investment that is supportive to investment with the goal of resettling the population and reducing their internal migration.

**The policies addressed by the National Agenda document for the years (2006-2015) through its various executive programs in the area of mobilizing savings and stimulating investment are:**

- Build an institutional framework for investment to ensure coordination between investment agencies and policies.
- Promote and attract foreign investment and empower local investments.
- Increase Jordan's viability for investment by concentrating on the level of services provided to investors (infrastructure, legislation).

### **6.2.4 Social Protection Policies**

- Expand the provision of protection services and social welfare, improve their quality, and ensure the satisfaction of their recipients.
- Develop community empowerment programs; to ensure the integration of beneficiaries in their families and local communities.
- Expand programs and projects in general family counselling, and in counselling for couples in particular.
- Promote the concept of voluntary community development, and expand its scope.
- Promote the concept of corporate social responsibility, and expand its base.

**The policies addressed by the National Agenda document for the years (2006-2015) through its various executive programs in the area of social protection and social wellbeing are:**

- Follow a comprehensive national social based policy that is based on the concept of sustainable human development.
- Empower the poorer strata of the community.
- Improve the quality of housing and infrastructure services in poor and low-income areas.

### 6.3 Social Protection and Post-Demographic Opportunity Policies

The “demographic opportunity” is usually made available for a limited period of time. This opportunity ends by the arrival of a large increase in the young age group that was achieved in the second stage, into the labour market in the third stage, and into retirement age in the fourth stage.

Thus, the aging society, with a higher proportion of elderly, poses challenges which the economy should be prepared for through appropriate policies, which should include but not be limited to the following:

- Emphasize the need to cover and include human power in social security insurances particularly old-age insurance, which is considered one of the pillars of protection of living, especially in the stage that follows the demographic opportunity (as mentioned in the National Agenda).
- Commit to pension reforms in order to strengthen the financial sustainability of the pension systems in a way that will ensure obligations to future generations, especially in light of the growing categories that are covered by social security and their dependence on income from these insurances.
- Support efforts to develop new insurances which will have more pressing need in light of the demographic opportunity data such as: (unemployment insurance, maternity insurance, etc.).
- Provide necessary support of various forms to expand the categories and services covered by insurance.
- Review and re-draft insurance regulations to ensure their harmony and benefit from the demographic opportunity.
- Develop preventive, therapeutic and psychological health care services for the elderly.

## 7. MONITORING MECHANISM

**Achieving the demographic opportunity requires monitoring the progress towards it as well as following it up on the national level. This can be done by:**

- Working towards pursuing the policies proposed in this document, which have not been previously addressed in the strategies, development plans and programs of the institutions, including the current executive development program 2009-2011, in coordination with the Ministry of Planning and International Cooperation and other national institutions.
- The Higher Population Council is working on raising awareness and advocating this document at the various national institutions (governmental, civil, private, and civil society institutions) in addition to ensuring the inclusion of performance indicators, projects and program of action in relation these policies within the plans of various operational programs.
- Ministries and stakeholders involved in the demographic opportunity will monitor the progress of performance indicators related to this opportunity, and will provide the Ministry of Planning and International Cooperation with periodic reports on their achievements in implementing their relevant plans and programs.
- The Ministry of Planning and International Cooperation will follow-up on the progress towards the performance indicators that are related to policies and provide the Higher Population Council with results periodically.
- The Higher Population Council will work at preparing a national report to show Jordan's progress towards achieving and investing in the demographic opportunity, on a regular basis and in coordination with all relevant national entities.

# ***APPENDICES***

## APPENDIX (1) Demographic Opportunity Scenarios

### THE FIRST SCENARIO (FIXED) 2007-2050 ASSUMING:

- Stability of gender ratio among newborns at 104 males per hundred females.
- The total fertility rate in 2007 (3.59 child per woman in reproductive age) will stay steady in the future, i.e. from the start of the projection period until the end of the projection period in 2050.
- Age specific fertility rates remain the same in 2007.
- Application of the "Coale-Demeny Regional Life Table for the East Model".
- Increase male life expectancy from 70.1 in 2007 to 73.1 years in 2017 and levelling thereafter, while increasing female life expectancy from 72.9 in 2007 to 76.9 years in 2017 and remaining at this value thereafter, until 2050.
- The net international migration is zero. (To include international migration in the projections accurate data is needed on the numbers of migrants and their distribution by sex and age which is not available at this time).
- Projections by urban and rural areas were not applied.

### THE SECOND SCENARIO (TARGETED OR THE DEMOGRAPHIC OPPORTUNITY SCENARIO) 2007-2050 ASSUMING:

- A gradual decline in fertility rate from 3.59 in 2007 to 3.1 child per woman in reproductive age in 2012 according to the national Reproductive Health Action Plan, to 2.5 child per woman in reproductive age in 2017 according to the objectives of the National Agenda and to the replacement level 2.1 child per woman in reproductive age by 2030 and beyond. Fertility rates were completed mathematically for all the mentioned years, namely: 2007-2012, 2012-2017, 2017-2030.
- Fertility rates were obtained by age from the childbearing pattern in the Asian population projections software DemProj.
- Other assumptions for the remaining components of population change are the same as set forth in the first scenario above.

### THE THIRD SCENARIO 2007-2050:

- This scenario resembles the second scenario in relation to all assumptions and challenges particularly in gradually decreasing the fertility rate from 3.59 child per woman in reproductive age in 2007 to 3.1 in year 2012, according to the national Reproductive Health Action Plan, and to 2.5 child per woman in reproductive age in 2017 (according to the objectives of the National Agenda document for years 2006 -2015). However, this scenario differs from the second scenario in the year of reaching the replacement fertility rate 2.1 child per woman in reproductive age by 2040 and beyond rather than in 2030. As in the previous scenario, fertility rates were completed mathematically for all the mentioned years, namely: 2007-2012, 2012-2017, 2017-2040.

## APPENDIX (2)

### Assumptions, Inputs and Methodology used in Conducting Population Projections for the Demographic Opportunity Policy Document

- Sex ratio at birth is the ratio close to the normal usual rate, which is 104 male births for every hundred female births.
- The total fertility rate for 2002 was 3.67 and 3.59 child per woman in reproductive age (15-49 years of age)<sup>19</sup> for year 2007. This rate was mathematically completed for all years between these two years, and the same procedure was used for fertility rates by age for the years between these two years. This was done for fertility rates for years 2004-2006, which are the years between 2002 and 2007.
- Use of the “Coale-Demeny Regional Life Table for the East Model”, which is used by the Department of Statistics.
- Life expectancy at birth remains constant for years 2004-2007 (71 years for males and 72 years for females).
- Net international migration in the coming years was not taken into account. However, projections included non-Jordanian population (lack of comprehensive data sources on migration).
- The number of non-Jordanians in 2007 - with the exception of the Iraqis – was estimated on the basis of their proportion in the population census of 2004 which is 0.049.
- The number of Iraqis in Jordan was assumed to be 450 thousand in 2007, according to an estimate based on a survey carried out by the Department of Statistics during that year. Iraqis were included in population projections, assuming that their age composition is similar to the Jordanian age structure for the same year, as well as for the rest of their population characteristics, namely: sex ratio, fertility rates and life expectancy at birth.

The population projections adopted the components method or elements of population change, which was done by using the computer software DemProj. It is known that this programming, which is developed by the «Futures Group», is used more widely than other software programs that were developed by the Population Division of the United Nations or the U.S. Census Bureau. The DemProj program can provide population projections for up to fifty years, broken down by some variables such as age, gender, as well as urban and rural areas. Among the advantages of this software is its connection to other software such as RAPID, which can be used for projections in other sectors that depend on population projections, mainly: the sectors of education, health and labour market.

The above mentioned general key assumptions were used in implementing population projections for Jordan (Jordanians and non-Jordanians) each separately. The document took into account estimates of population groups living permanently in Jordan, and in the period 2007-2050 according to the three scenarios (Appendix 1).

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<sup>19</sup> Department of Statistics, Results of the Population and Family Health Surveys for years 2002 and 2007.

## ASSUMPTIONS FOR PROJECTIONS IN EDUCATION

- Constant enrolment rates for different levels of education were assumed, with 2007 as the base year for the duration of the projections until year 2050, by considering the variable of population number as the main influencing variable in the demographic opportunity.

## ASSUMPTIONS FOR PROJECTIONS IN ECONOMIC STATUS

- Future projections prepared by the United Nations were used to implement projections of the labour force during the projection period (2008-2050), by adopting detailed economic participation rates by age for 2006 and 2008 from the results of Labour and Unemployment Survey conducted by the Department of Statistics in those two years, in order to predict these rates during the projection years. Later on, these rates were used to get the size of the labour force in each age group (15-64 years).
- Projections concerning the number of jobs to be created were implemented based on the number of jobs observed in 2006 and 2008, which were detected by a survey on new jobs created, carried out by the Department of Statistics during those years. The number of new jobs created during the projection period was obtained based on the size of the labour force in those years, taking into account the increase in the labour force seen in the years 2006-2008.
- Adoption of the assumptions included in the National Agenda for 2017<sup>20</sup> in relation to the proportion of women's participation in the labour market 20%, assuming its fixed value until the end of the 2050 projections.

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<sup>20</sup> The National Agenda Document for Years (2006-2015), First Volume.

### APPENDIX (3) Indicators for Achieving Economic Growth

Indicator	Base Year 2006	2008	2010	2015	2020	2025	2030
Unemployment Rate <sup>21</sup>	14	12.7	12	9.5	7	6	6
Revised Rate of Economic Participation of Women <sup>22</sup>	11.9	14.2	15.2	17.5	20	22.5	25
Average Annual Real Growth Rate of Gross Domestic Product <sup>23</sup>	6.2	7.9	4	7.2	7.2	7.2	7.2

<sup>21</sup> The same rate that was adopted for the decline in unemployment rate in the executive program of the National Agenda was adopted, and a fixed rate of 6 after 2025, which is the global optimal percent.

<sup>22</sup> The document adopted the same rate for the percent increase in the participation rate in the executive program of the National Agenda.

<sup>23</sup> This is the goal adopted by the National Agenda document for year 2017.

# ***ANNEXES***



## **ANNEX (1)**

### **The Demographic Opportunity Steering Committee Members**

Based on the decision of the prime minister no. 25a/11/4/8711 dated 8/5/2007, a steering committee was formed to prepare for the demographic opportunity in Jordan, headed by the minister of Planning and International Cooperation and the membership of:

1. Minister of Education
2. Minister of Higher Education and Scientific Research
3. Minister of Labour
4. Minister of Awqaf and Islamic Affairs
5. Minister of Social Development
6. Minister of Health
7. President of the Civil Service Bureau
8. Secretary General for the Higher Population Council (Secretariat)
9. President of the Higher Council for Youth
10. General Director for the Department of Statistics

In addition to delegates from each of:

1. Social Security Corporation
2. Vocational Training Corporation
3. National Aid Fund
4. Industrial Estates Corporation
5. Jordan Radio and Television Cooperation
6. Medical Syndicate
7. Engineering Syndicate
8. Association of Banks
9. Chamber of Industry
10. Chamber of Commerce
11. The Jordanian Hashemite Fund for Human Development
12. Secretariat of the Higher Population Council
13. Three academics from Jordanian Universities
14. Three Reporters

## ANNEX (2) The Demographic Opportunity Technical Committee Members

**The technical committee, set up by the Higher Population Council to develop the Demographic Opportunity “A Policy Document”, included the following persons and representatives:**

1. H.E Dr. Munther Al-Masri
2. H.E Mr. Mohammad Al-Khasawneh
3. H.E Dr. Khaled Al-Wazani
4. H.E Ms. Reem Badran
5. Mr. Yousef Mansour
6. Mr. Mikhled Al-Omari
7. Dr. Ruwaida Rasheed
8. Mr. Abdel Aziz Farah
9. Dr. Issa Masarweh
10. Dr. Manal Al-Fiqi
11. Eng. Ali Nasrallah
12. Mr. Douglas Hessler
13. Dr. Fawwaz Al-Ratrout
14. Ministry of Planning and International Corporation
15. Ministry of Education
16. Ministry of Labour
17. Ministry of Social Development
18. Ministry of Health
19. Ministry of Awqaf and Islamic Affairs
20. Ministry of Interior
21. Department of Statistics
22. United Nations Population Fund
23. Chamber of Industry
24. Chamber of Commerce
25. Industrial Estate Corporation
26. Vocational Training Corporation
27. National Council for Family Affairs
28. Jordan University
29. Mu'ta University
30. Balqa University
31. Medical Syndicate
32. The Jordanian National Commission for Women
33. Jordan Radio and Television Corporation
34. Technical Assistance/UNFPA
35. Association of Banks
36. “For Excellence” Consulting Firm









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