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Views on the Crisis

Impact of the Pandemic on Population Growth in Egypt



Introduction

While the whole world shares the broad outlines of the economic and social repercussions of the Coronavirus (COVID-19), which are unprecedented in its recent history, the implications thereof for each country are

linked to the nature of each country's economic system, its ability to withstand the entailed repercussions and the speed of its recovery.

In light of the need to study the sectoral implications of these repercussions in order to address the crisis properly, the Egyptian Center for Economic Studies (ECES), in its initiative, is producing a set of daily reports entitled "Views on Crisis". The reports aim to analyze the implications of the coronavirus crisis for Egypt in relation to a number of vital production and service sectors and to key macroeconomic variables. This ECES initiative comes from the belief that the current critical conditions require directing the state's efforts towards achieving two main goals: providing a decent life for Egyptians during the crisis and in the recovery phase, preserving the existing investments especially, domestic investments and to help overcome the crisis and prepare for a rapid launch with the gradual decline of the crisis and the recovery of the global economy.

The methodology used in these reports is based on an analysis of the supply and demand shocks associated

with the crisis cycle in its various stages. Given the lack of detailed data on the sectoral impact of the crisis, the sectoral analysis is based on logical assumptions related to the nature of each sector and the degree of sector vulnerability to previous severe crises that were certainly less severe than the current crisis and different in nature. However, it is a starting point for the urgently required scientific diligence at this stage.

The reports attempt to provide a detailed perception of the magnitude and direction of crisis impact on each sector at present and until the end of the crisis. They aim to propose quick solutions to reduce the adverse impacts of the crisis in a balanced and integrated means that complement the serious efforts made by the state in this regard, and to offer other longer-term solutions to the existing institutional flaws, clearly revealed by the crisis. It is high time that these flaws are radically removed, which will improve post-crisis development efforts.

“The COVID-19 pandemic has caused tremendous upheaval to health systems around the world, disrupting access to

family planning information and services, as well as sexual and reproductive health more broadly. Despite this disruption, the need for family planning remains the same.

For women, family planning is critical, basic health care. As health systems shift to prevent and treat people with COVID-19, it is essential they also protect access to family planning services.”

Family Planning 2020

Overview:

- As a result of the Covid-19 pandemic, health systems around the world have focused their efforts on responding to the crisis and combating the pandemic. This came at the expense of usual basic health services, including reproductive and sexual health services, of which family planning is at the heart.
- Practical evidence indicates that the more the service is disrupted, the less mature the health system and the poorer its capabilities. In this regard, the United Nations Population Fund

affirms that family planning services will be more affected in middle and low-income countries with weak health systems that are already suffering from an accelerating population problem, as in the case of Egypt.¹

- From this standpoint comes the importance of analyzing the problem in the Egyptian case, not only from the perspective of the impact of Covid-19 on the population problem, but also because addressing this problem is one of the most important engines of economic recovery due to its direct impact on the health of the mother and child. Hence the vulnerability of these groups to the virus on one hand, and the impact on the population structure and henceforth on all indicators of economic, social and political development in Egypt on the other.
- Accordingly, the report seeks to achieve three main objectives:
 1. Attempting to measure the extent of the disruption of the health system on family planning services using a mathematical model.

¹<https://www.devex.com/news/opinion-howwill-covid-19-affect-global-access-to-contraceptives-andwhat-can-we-do-about-it96745>

٢. Developing an accurate vision of how to deal with this disruption so that there is no problem pertaining to the extreme aggravation of the population.
 ٣. Examining the readiness of the health system in Egypt to deal with this disruption and remedy the situation.
- In order to achieve these goals, two specific questions must be answered: How has the disruption of the health system affected everyone who demanded and supplied family planning services in Egypt? How to achieve the desired balance between supply and demand during the crisis period?
 - To answer these questions properly,
 - first it is necessary to determine the pivotal role of family planning services in shaping the population structure and rates of population increase. Second, to change the perception that spending on family planning is purely consumer spending, while in reality it is an economic investment with positive future returns.

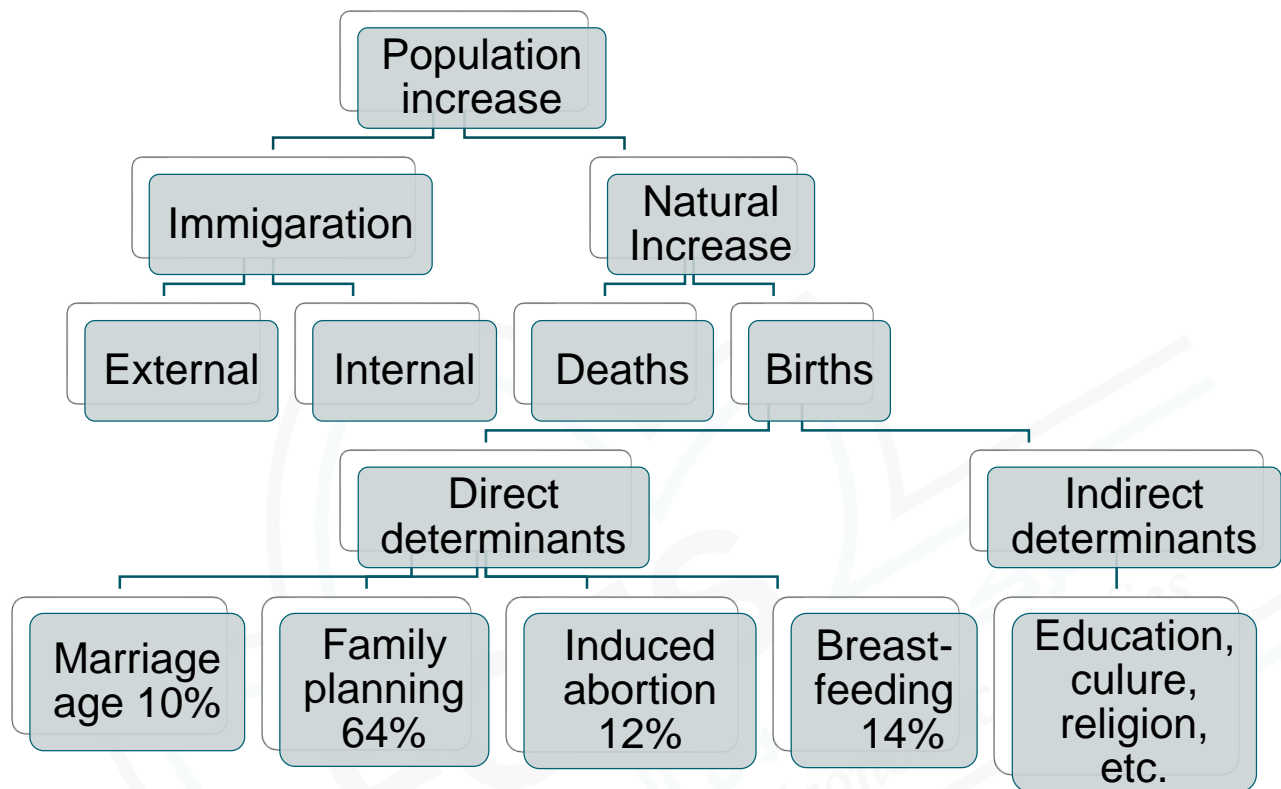
First: Determining the Pivotal Role of Family Planning Services in shaping the Population Structure

- Any change in fertility rates is entirely due to four direct factors: family planning, induced abortion, marriage age, and breastfeeding.[∧]
- It is clear from Figure 1 that family planning is the most important of all direct determinants; 64% of the change in fertility rates in Egypt is ascribed to it, compared to 14% for breastfeeding, 12% for induced abortion and 10% for the age of marriage.
- Based on this, we can say that family planning is the most important determinant of population increase in Egypt, as Egypt annually avoids about 4 million unplanned pregnancies and about 1.6 million unsafe abortions thanks to the use of family planning methods, according to 2019 data.[∧]

[∧]Education, culture, religion and social norms are indirect determinants that affect birth rates by influencing the direct determinants, for example education affects family planning by delaying the age of marriage, and increasing awareness of the importance of using birth control methods ... etc.

[∧]<http://www.familyplanning2020.org/>

Figure 1. Family planning services as a central determinant of population growth in Egypt



Source: Prepared by the Egyptian Center for Economic Studies based on the calculations of AL Zalak and Goujon 2017.

Second: Changing the Perception that Spending on Family Planning is purely Consumer Spending

- Spending on family planning is thought of in Egypt, similar to many other countries, as pressure on state resources that can be otherwise used for other purposes with greater economic returns.

- There is an urgent need to revisit this as the economic impact of population increase and its repercussions on the quality of human capital in Egypt makes family planning an economic investment with positive returns that affect current and future generations, similar to spending on export subsidies.⁴
- According to Table 1, which measures the economic return of spending on family planning based on 2012/2013 data, every pound spent on family planning achieves a total savings of EGP 56.1. This is because, thanks to family planning services, the State will avoid the birth of about 43.3 million citizens during the period 2015-2045 and hence avoid the costs of providing government services to them, specifically: education, health, food subsidies, and housing and social facilities. Table 1 shows the achieved savings for each of these services.
- By updating these estimates using 2020/2021 data, to take into account the economic developments that Egypt has witnessed since 2013, most importantly the floatation of the Egyptian

⁴Every pound spent on subsidizing exports brings in hard currency, according to the nature of the sector.

pound,^othe net return on every pound spent on family planning increases to EGP 151.7, as shown in Table 1.

Table 1. Return on investment in family planning services in Egypt

Sector	Revenue per pound spent on family planning, based on 2012/2013 data*	Return per pound spent on family planning, based on 2020/2021 data**
Health	9.2	32.9
Education	31.1	74.1
Food subsidy	11.5	16.7
Housing and social facilities	4.2	28.0
Total	56.1	151.7

Source: Prepared by the Egyptian Center for Economic Studies using Fouad and Nassar data.

* Estimates of Fouad and Nassar (2015)

** ECES estimates using the same methodology as Fouad and Nassar.

These data reflect the critical importance of family planning in Egypt and the economic spending it will avail in the future.

^oBy increasing the estimates of Fouad and Nassar (2015) by the same rate as the increase in spending on education, health, support, housing and social facilities between 2012/2013 and 2020/2021.

To answer the two main questions of the report, we will analyze the demand and supply sides of family planning methods, through:

١. Analysis of the current situation as a basis for any potential changes during the crisis, using the Population Health Survey 2014 data as the latest available reliable data.
٢. An attempt to measure the disruption caused by the crisis using the "Micro" model, a modern model specially prepared by the Reproductive Health Supplies Coalition in June 2020 to simulate the impact of the Covid-19 crisis on family planning services.^٦
٣. The effect of this imbalance on rates of unplanned pregnancy, abortion and births, using the "Fam-Plan" model, which is a causal demographic model used to estimate the effect of expansion or decline in population and health programs.^٧

^٦For more details about the model, see the following link: <https://www.rhsupplies.org/activities-resources/tools/micro/>

^٧For more details about the model, see the following link: <https://www.avenirhealth.org/software-spectrummodels.php#famplan>

The report then attempts to develop a set of proposed solutions to achieve a balance between supply and demand during the crisis period.

1. Demand for family planning methods

1.1. A quick review of the most important indicators of demand for family planning methods and their development during the period 1988 - 2014

1.1.1. Rigid demand and slight decline in use

- Although 100% of women in Egypt know a modern method of family planning, the demand rate has not exceeded 70% on average since the 1990s, which means that 30% of women in Egypt do not demand the service at all.
- As for demand itself, it is divided into met demand (actual use) and unmet demand (demand that was not translated into actual use for any reason). In this regard, the population health survey data indicates a clear increase in the rate of use of family planning methods during the period 1992 - 2003 from 47% to 60%. It stayed relatively stable at this rate until 2008, then decreased slightly to 58.5% in 2014.

- On the other hand, the rate of unmet demand increased from 11.6% in 2008 to 12.6% in 2014. This happened in parallel with the decline in the government's interest in the population issue on the one hand, and the decline in international funding, including that of the USAID on the other.[^]

1, 1, 2. Geography and income as fundamental determinants of employment, and the diminishing role of education

- Table 2 indicates the rates of demand for and use of family planning methods according to place of residence, income level, and education. The Table shows the following:
- Demand in both the border governorates and rural Lower Egypt is substantially lower compared to the general average of demand in Egypt. This is due, in large part, to local customs, traditions and culture in these regions.
- The low rate of employment and the clearly high rate of unmet demand in the border governorates compared to the general average in Egypt as well as to the average of other

[^]Dawood and Abdul Latif. 2019. Egypt's Population Policy: Analyzing the Ingredients for Success and the Optimal Institutional Form - a Comparative Study. The Egyptian Center for Economic Studies, Working Paper No. 203.

regions. This is due to the inability to obtain the contraceptive methods desired by and acceptable to women either for social or economic considerations or because the service is not available in the first place.

- It is also noted that demand is low and usage is stable despite the high level of education. In this regard, many studies concluded that education no longer determines the demand for and use of family planning methods in Egypt. This may be due to the fact that reproductive and sexual health are not taught at any stage of education in Egypt. The young obtain their information in this regard from other sources that are often unsafe and unreliable, such as the Internet, friends and family.
- Despite the high rates of usage and decrease in unmet demand with higher income level, unmet demand registered 11% in the highest income bracket, which means that the problem is not financial but lies in either lack of availability or inability to access the service.

Table 2. Demand and usage rates by region, income level and education.

2014		Total demand (%)	Met Demand / Usage Rate (%)	Unmet demand (%)
Residence	Urban governments	73.7	62.6	11.1
	Urban Lower Egypt	74.4	64.1	10.3
	Rural Lower Egypt	73.4	62.5	10.9
	Urban Upper Egypt	72.5	58.9	13.5
	Rural Upper Egypt	66	55	11
	Border governments	63.7	46.7	17
Income	0 - 20	71.3	55.9	15.4
	20 - 40	70.7	55.7	15
	40-60	70.5	59.4	11.1
	60--80	70.9	59.8	11.1
	80- 100	72.4	61.4	11
Education	Uneducated	73.1	59.2	13.9
	Primary	72.3	58.8	13.4
	Secondary	70.6	58.2	12.4
	Higher	69	58.3	10.7
Total		71.1	58.5	12.6

Source: Prepared by the Egyptian Center for Economic Studies based on data of the Population Health Survey 2014.

1, 1, 3. **Method skew of the combination used in Egypt**

- In a study conducted in 2000, Egypt was the eighth largest country to suffer from Method Skew towards the IUD out of 83 countries studied. Although there is no optimal combination of methods, the skew towards a particular method limits the options available to women and in most cases leads to an increase in unmet demand.⁹
- Table 3 shows the rates of usage of different types of methods in Egypt and their development over time. The IUD comes first, then pills and injection, followed by the Implanon and condoms with a large difference. The Table also shows the following:
 - The occurrence of a fundamental shift towards the use of pills beginning in 2003 despite the high rate of discontinuation and complaints about their negative effects and their failure to prevent pregnancy compared to the IUD and Implanon. This is due to the fact that pills help women overcome the gaps in the health and social system in Egypt, so there is no need for examination, installation, removal, follow-up of side

⁹MEASURE Evaluation (2000).

effects, or the cooperation of the husband as other methods.

- The weak utilization rate of Implanon despite its high effectiveness and low rates of discontinuation, due to severe imbalances in both the supply and demand sides. Regarding supply, Implanon is not available in sufficient quantities in the public sector, in addition to the lack of qualified personnel to fit it. As for demand, many women in Egypt either do not know it or have misconceptions about it.
- As for the condom, although there are no problems with supply, there is a basic problem in demand, either because of lack of knowledge and avoiding to talk about it out of shyness, or because of the husband's lack of cooperation.
- It is clear from the table that side effects are the first and most important reason for discontinuation of all types of methods except condoms. This is due either to the lack of

sufficiently qualified personnel or the weak awareness of the potential side effects and how to deal with them.¹

Table 3. The rate of usage and discontinuation of family planning methods in Egypt in 2014 and causes

Method	Usage rate (2014)	Usage rate evolution (1988-2014)	Discontinuation rate after the first year (2014) - percent of female users	Reason for interruption (most cited) - percentage of female users		
				Side effects	Desire to conceive	Method failure
IUD	30.1	Continuous increase from 15.8% to 36.7% in 2003 and then decrease	14.3	7.5	4.3	1.2
Pills	16	Continuous decline from 15.3% to 9.3% in 2003 and then increase	41.5	11	8.7	7.6
Injection	8.5	Continuous rise from	37.9	20.8	6.5	1.5

¹ Only 47.6% of contraceptive users were informed of possible side effects or problems, and this percentage drops to 41% in the case of pills, and rises to 57.5% in the case of Implanon. Only 34.5% of users were told what to do if any side effects occurred. This percentage drops to 29% for pill and rises to 38% for the IUD.

		0.1% to 8.5%				
Implanon	0.5	Intense fluctuation, but did not exceed 1%	14.7	10.9	1.9	0.9
Condom	0.5	Decreased from 2.4 to 0.5	31.9	2.8	8.3	14.4
Sterilization	1.2	Semi static	-	-	-	-

Source: Prepared by the Egyptian Center for Economic Studies based on the Population Health Survey data, various years.

An attempt to quantify the demand changes that resulted from the crisis

1, 1, 4. Quantitative estimate of the possible shifting pattern

- Shifting means to switch from using one method to another, as the disruption of the service and the presence of problems in obtaining it mean a decline in the demand for methods that need direct contact with the health system, such as injections and IUDs, and its rise in self-care methods such as pills and condoms, as well as other traditional means.

¹⁾In addition to the percentage of women who interrupted because of their desire for a more efficient method.

- In what follows, an attempt is made to quantitatively estimate shifting using the “Micro” model. Table 4 begins with an explanation of the detailed methodology and assumptions for the potential scenarios. A detailed matrix of assumptions has been included in the appendix.

Table 4. Matrix of assumptions regarding the shifting pattern of each method

Method	Optimistic scenario: moderate disruption *	Pessimistic scenario: severe disruption	Reason
Injection	Significant decline in use	Very significant decline in use	The injection needs regular periodic contact with the service provider (every month or three months). Therefore, it will be the most declining type, and the rate of decline will increase as the service disruption becomes more severe.
IUD	Limited decline	Very slight decline	The crisis will affect the rates of IUD use in a limited way, because its use can continue even if it expires in order to avoid contact with the health system. This is because its effectiveness continues for several months after the end of the life span specified on the package. However, the rate of use will decrease slightly due to the presence of some

			cases in which the removal is necessary.
Pills	Significant rise	Significant rise	The greater the disruption of service, the higher the demand for condoms and pills as self-care methods that do not require much contact with the health system.
Condom	Significant rise	Very significant rise	
Implanon	Very significant rise	Slight rise	The Implanon requires a lesser degree of contact with the health system compared to the IUD and it is more effective and longer compared to pills. This will encourage many women to continue using it. Therefore, the use of Implanon is expected to increase significantly in the event of a slight or moderate disruption in the service. However, the more disruption of the health system, the less the ability of users to obtain it.
Traditional methods	Very large rise	Very significant rise	A large number of women will resort to traditional methods, especially in areas where the use of these methods is already high, most notably rural Upper Egypt, as well as families who will avoid resorting to the health system, whether in the public or private sectors.

Source: Prepared by the Egyptian Center for Economic Studies.

- Table 5 presents the results of the “Micro” model for Egypt. These results are consistent with the estimates prepared by the United Nations Population Fund of the

impact of the crisis on family planning services at the global level.¹²

Table 5. Quantitative estimate of the shift of female users from one method to another as a result of the crisis during the first six months of the crisis

Method	Estimated number of female users - March 2020	Optimistic scenario (moderate service disruption)		Pessimistic scenario (severe service disruption)	
		No.	Change	No.	Change
Sterilization	155,134	155,134	0.0%	155,134	0.0%
IUD	5,467,653	5,378,470	-2%	5,411,170	-1.0%
Implanon	49,457	63,158	28%	51,592	4.3%
Injection	1,567,785	1,135,816	-28%	796,595	-49.2%
Pills	3,148,077	3,412,187	8%	3,419,392	8.6%
Condom	78,296	126,849	62%	147,065	87.8%
Traditional	18,841	213,629	1034%	504,295	2576.6%
Total	10,485,243	10,485,243	0%	10,485,243	0.0%

Source: Prepared by the Egyptian Center for Economic Studies based on the results of the “Micro” model.

¹²UNFPA. 2020. Impact of the COVID-19 Pandemic on Family Planning and Ending Gender-based Violence, Female Genital Mutilation and Child Marriage. April 2020.

- It is evident from the table that the number of IUD users decreased by 1% only in the case of the pessimistic scenario, which is less than the percentage of their decline in the case of the optimistic scenario (2%). This is mainly because some women for whom removal will be necessary will not be able to do so because of the severity of the disruption of the service, including negative repercussions on the psychological and physical health of these women.
- As shown by the table, the number of female users of Implanon increased by only 4.3% in the pessimistic scenario, compared to 28% in the optimistic scenario, which is a big difference. This is due to the fact that the demand for Implanon will decline very quickly as the service is severely disrupted, because the central hospitals in the public sector are the main source for obtaining it for the vast majority of women users, especially low-income women.
- Nevertheless, a limited group will still be able to obtain it from the private sector at an unsubsidized price. This is the reason for the continued weak increase in the number of female users even in the event of a severe

disruption in the service, as reflected by the pessimistic scenario.

- The model also showed an increase in the number of women using pills by 8% in the optimistic scenario, and 8.6% in the pessimistic scenario. This is a meagre difference between the two scenarios, partly due to a statistical reason, which is the huge number of pill users in the first place (3.1 million women), making the change in the number appear weak.
- With the disruption of service and fear of the epidemic that may reach the point where even obtaining pills becomes difficult, traditional methods will be resorted to. Model estimates indicate that the number of females using these methods will multiply rapidly, by about 10 times in the optimistic scenario and 25 times in the pessimistic scenario as evidenced by the penultimate row in Table 5.

The next part of the analysis focuses on what these numbers mean for the population problem in Egypt, by measuring the implications of the already estimated shift patterns for unplanned pregnancy, abortion, and births.

1.1.6. Shift implications for unplanned pregnancy, miscarriages and births

- Regardless of the availability of methods, shifting will cause mandatory increases in the rates of unplanned pregnancy, abortion, and births. This is a result of the transition to self-care methods, which are methods characterized by low practical effectiveness due to misuse, such as forgetfulness or lack of cooperation from the husband, and other reasons.
- To complement the previous analysis, the Fam-Plan model was used to estimate the effect of shifting patterns in both the optimistic and pessimistic scenarios on unplanned pregnancy, abortion, and births by comparing these scenarios with the base-line scenario—a scenario that simulates the continuation of demand rates normally, as if the pandemic was not for both 2020 and 2021.

- Table 6 presents the model results, which indicate that the number of unplanned pregnancies and abortions increased by 5.6% to 12.8%, and so did the birth rate by percentages ranging from 1.7% to 2.9% compared to the normal rates that would have been recorded if the pandemic had not occurred.

Table 6. Implications of the shifting in both optimistic and pessimistic scenarios for unplanned pregnancy, abortion, and births – Per Case*

Scenario	Model estimates for year ...	Unplanned pregnancy		Induced abortion		Births	
		The annual number that the crisis will cause	The percentage of growth compared to the monthly average in the base situation for the same year	The annual number that the crisis will cause	The percentage of growth compared to the monthly average in the base situation for the same year	The annual number that the crisis will cause	The percentage of growth compared to the monthly average in the base situation for the same year
Optimistic	2020	59514	4.9%	27971	4.9%	31543	1.3%
	2021	60818	5.0%	28585	5.0%	32233	1.3%
Pessimistic	2020	115944	9.5%	54494	9.5%	61450	2.5%
	2021	118484	9.8%	55688	9.8%	62796	2.6%

Source: Prepared by the Egyptian Center for Economic Studies based on results of the “Fam-Plan” model.

* This table shows the effect of met shifting, meaning that it is assumed that the government has already met the needs of women in terms of pills, condoms and other types of methods that are in high demand as a result of the crisis. It will cause a high rate of unplanned pregnancy and, consequently, abortion and births. However, due to the fact that these methods are less effective than long-term methods for reasons

related to lack of correct use, they will cause high rates of unplanned pregnancy and, consequently, abortions and births.

- These increases necessarily imply an economic cost to both the State and families. For the State, the higher number of births means the higher the need for more expenditures to provide services such as education, health, support, and basic facilities to a greater number of individuals at the same level of quality. In the event that these expenses are not allocated, this means a decline in the quality of service, which is already very weak.
- As for families, abortion as well as the birth of an unplanned child represents an unforeseen financial and psychological burden. In light of the pandemic and the associated stressful economic conditions and limited health resources, induced abortion and childbirth represent a real threat to the health of women and children at present.

1, 1, 7. Quantitative estimate of the methods needed to respond flexibly to the shifting effect

- Table 7 shows estimates of the quantity of each type of method that must be available during the first six

months of the crisis (April-August) in order for the Ministry of Health to respond flexibly to the aforementioned shifting effect in the case of both the optimistic and pessimistic scenarios.

Table 7. Cumulative demand for family planning methods during the six months (April - September) 2020

Type	Six months before the crisis	Optimistic scenario			Pessimistic scenario		
		Total required	Change	%	Total required	Change	%
Pills	22,350,938	23,989,899	1638961	7.3%	24,040,329	1689391	7.6%
Injection	3,155,213	2,645,657	-509556	-16%	2,250,874	-904338	- 29%
IUD	660,416	118,308	-542108	- 82%	5,916	-654500	- 99%
Implanon	13,075	31,879	18804	144%	6,100	-6975	-53%
Condom	2819152	4,547,019	1727867.2	61%	5,196,928	2377776.2	84%

Source: Prepared by the Egyptian Center for Economic Studies based on the results of the “Fam-Plan” model.

- The table shows an increase in the requirement of pills by 7.3% in the optimistic scenario and 7.6% in the pessimistic scenario. Also, condom needs will increase by 61% in the optimistic scenario and 84% in the pessimistic scenario. As for the Implanon, the need is expected to increase by 144% in the optimistic scenario, and to decline by 53% in the pessimistic scenario.
- Preparing for the increase in the required volume of pills, Implanon and condoms is necessary to avoid increased rates of unplanned pregnancy, abortion and newborns at rates exceeding the rates estimated in Table 8. This raises an important question: Does the Egyptian government have the ability to respond to this demand? To answer this question, we must analyze the supply of family planning methods in Egypt, as will be discussed in the next part of the report.

۲. Supply of family planning methods

۲.۱. A quick overview of the sectoral distribution of family planning service providers

- The public sector provides family planning services to 56.1 percent of female users, while the private sector accounts for 42 percent. In contrast, the private sector provided family planning services to only 1.9 percent of women in 2014.
- This unbalanced combination has repercussions in itself. The public sector being the lead in service provision means greater disruption due to the Ministry of Health, which is the lead entity responsible for facing the pandemic, mobilizing all resources to confront the epidemic. In addition, the public sector is the source of obtaining service at a subsidized price for the lowest income groups.
- In addition, the society is now paying the price for the continuous decline in the role of the private sector since the 1990s, which could have played a fundamental role in providing family planning services during the current period had it not been for the restrictions it suffered over the past years.

٢,٢. *The contraceptive method supply plans adopted by the Ministry before the crisis and compulsory requirements resulting from the change in demand*

- What truly matters is the response of supply to the demand and not the other way round. Determining the supply first and then trying to adapt demand to it is one of the structural problems faced by family planning services in Egypt. It is expected that this problem will appear more clearly during the current crisis if the State ignores the changes in demand and continues to follow the same policy, which threatens to decrease the usage rates of family planning methods in Egypt.
- The sudden change in demand resulting from the pandemic means that the Ministry of Health is facing a different reality from what it has planned, changing the viability of the stocks already available. In this regard, the Family Planning Report indicates that public sector purchases over the past years were concentrated in the IUD, and the report did not record any purchases of condoms or pills during the period 2015-2018, as shown in Table 8.

- This is abnormal, indicating either the existence of a very large stock of pills and condoms, or the absence of demand for these methods in the public sector, or a lack of data regarding these methods specifically. In all cases, this raises many questions about the mechanisms for managing purchases of family planning methods in Egypt.

Table 8. Volume of public sector purchases per unit of each method (2014-2018)

Year	Condom	Implanon	Injection	IUD	Pills
2014	468,000	140,032	365,000	591,111	0
2015	0	0	0	258,200	0
2016	0	140,000	0	2,680,434	0
2017	0	40,032	0	375,045	0
2018	0	160,046	0	3,774,650	0

Source: Prepared by the Egyptian Center for Economic Studies based on data from the Family Planning Market Report.

- Table 8 also shows the fluctuation of government purchases and lack of a consistent pattern therein from year to year. For example, the volume of IUD purchases decreased by 86% in 2017 and then increased by 906%

in 2018. This may reflect weak prior strategic planning and the absence of an accurate assessment of needs on the ground from year to year.

- By comparing public sector purchases with actual use estimates, it becomes clear that there is a clear deficit in public sector purchases of condoms, injections and pills, as evident from Table 9. This deficit may be partly due to either lack of sufficient resources to fully meet the demand for these methods or poor planning.
- The existence of a surplus in public sector purchases from other methods, such as the Implanon and the IUD, is likely due to poor planning in the first place and not lack of resources. This is evident in the turn of purchases of this method from a surplus to a deficit and from a deficit to a surplus from year to year with no clear reasons.

Table 9. Comparison of public sector procurement with actual use estimates for 2018

2018	Condom	Implanon	Injection	IUD	Pills
The volume of public sector purchases per unit	0	160,046	0	3,774,650	0
Estimated actual unit usage	10,802,869	25,648	6,121,626	1,295,982	43,211,477
The difference	-10,802,869	134,398	- 6,121,626	2,478,668	-43,211,477

Source: Prepared by the Egyptian Center for Economic Studies based on data of the Family Planning Market Report, and estimates of the Fam-Plan model.

٢,٣. Expectations of the effect of non-responsiveness of supply to changes in demand on unplanned pregnancy, abortion and births

- Unplanned pregnancies, abortion and births are expected to be higher than normal rates that would have occurred had the pandemic not existed. This increase is divided into two parts, a fixed and confirmed part that is the result of the shifting effect. It is difficult to limit the impact of the first part due to its relation to changes that have already occurred as a result of the crisis on the one hand, and to

its connection with many structural imbalances that already existed before the crisis on the other.

- The second part of the increase depends on the ability of supply to respond flexibly to changes in demand during the crisis period. If the need for pills, condoms and Implanon is not fully met, rates of unplanned pregnancy, abortion, and births will increase beyond the rates that normally rise due to the shifting effect.
- According to Table 10, the effect in this case will depend on how women wishing to obtain these methods deal with the supply gap, and whether they will resort to traditional means (Option 1 - A) or stop using methods completely (Option 2 - B).
- The first option (a) means an increase in the number of female users of traditional methods (to register 539993 women) by 5.2% of the total female users in Egypt, in the optimistic scenario, and 846514 women by 8.1% in the pessimistic scenario. As for the second option (b), it means a decline in usage rates by the same rates for the optimistic and pessimistic scenarios, respectively.

Table 10. Options that women can turn to if their self-care needs are not met

Option		Reason
First Option (a)	Use a traditional method	Continued desire to avoid pregnancy despite the absence of a modern method of family planning
Second Option (b)	Non-use of any method	Lack of knowledge about traditional methods, or lack of awareness of how to use them effectively.

- Tables 11 (a) and 11 (b) present the effect of each of the two options, respectively. It is clear from these tables that the impact of the crisis on unplanned pregnancy, abortion and births has doubled in the second option compared to the first, which reflects the importance of the effective use of traditional methods of family planning in the case of a lack of a modern method.

Table 11 (a). Consequences of resorting to traditional methods (option 1) on unplanned pregnancy, abortion, and births – per case

Scenario	Model estimates for years	Unplanned pregnancy		Induced abortion		Births - annual (growth)	
		The annual number that the crisis will cause	The percentage of growth compared to the monthly average in the base situation for the same year	The annual number that the crisis will cause	The percentage of growth compared to the monthly average in the base situation for the same year	The annual number that the crisis will cause	The percentage of growth compared to the monthly average in the base situation for the same year
Optimistic	2020	118431	9.7%	55662	9.7%	62769	2.5%
	2021	150011	12.4%	70506	12.4%	79505	3.2%
Pessimistic	2020	173314	14.3%	81457	14.3%	91857	3.7%
	2021	204601	17.0%	96163	17.0%	108438	4.4%

Source: Prepared by the Egyptian Center for Economic Studies based on results of the “Fam-Plan” model.

Table 11 (b). Repercussions of discontinuation of use (Option 2) for unplanned pregnancy, abortion, and births - per case

Scenario	Model estimates for years	Unplanned pregnancy		Induced abortion		Births - annual (growth)	
		The annual number that the crisis will cause	The percentage of growth compared to the monthly average in the base situation for the same year	The annual number that the crisis will cause	The percentage of growth compared to the monthly average in the base situation for the same year	The annual number that the crisis will cause	The percentage of growth compared to the monthly average in the base situation for the same year
Optimistic	2020	251258	%20.0	118092	%20.0	133166	%5.41
	2021	283451	%22.7	133222	%22.7	150229	%6.13
Pessimistic	2020	481579	%38.3	226342	%38.3	255237	%10.37
	2021	517298	%41.4	243130	%41.4	274168	%11.20

Source: Prepared by the Egyptian Center for Economic Studies based on results of the “Fam-Plan” model.

۳. A summary of the impact of the crisis and the most important policies needed to strike the desired balance between supply and demand

- Minimizing the impact of the crisis on the number of births in Egypt requires, at minimum, responding quickly and flexibly to growing demand for self-care family planning methods, most importantly, pills and condoms. Only then the crisis will cause an unavoidable but limited increase in the number of births, as shown in Table 12.
- However, the failure of supply to respond flexibly to changes in demand will lead to greater increases in the number of births, depending on the response of women to the lack of modern contraception methods. In the case of a complete cessation of use, the increase in the number of births will be four times the unavoidable increase. It will decrease to two times only if a traditional method is used as an alternative, as shown in Table 12.

Table 12. Summary of the impact of the crisis on the number of births in Egypt during a whole year and required interventions to reduce this impact

		The best situation: met shifting	Second best possible situation: unmet shifting and moving to traditional methods as an alternative	Worst situation: Unmet shifting and complete cessation of use
Scenario	Optimistic	%1.30	%3.20	%٦,١٣
	Pessimistic	%2.60	%4.40	%11.20
Required intervention		Providing all women's needs of all types of family planning methods, especially self-care methods	In the event that provision of all women's needs of modern methods fails, awareness of all kinds of traditional methods of family planning and how to use them with the greatest possible effectiveness should be spread widely, and a hotline must be designated to respond to all women's inquiries in this regard.	

Source: Prepared by the Egyptian Center for Economic Studies based on results of the “Fam-Plan” model.

The next section of the report presents some of the most important solutions that will help the government strike the desirable balance between supply and demand during the crisis period. These

solutions include an integrated set of immediate, short and medium-term actions in addition to a set of structural measures necessary to reform the system in a sustainable manner, as follows:

1. Immediate actions:

- Expanding the distribution of emergency contraceptive pills on a large scale through pharmacies, primary health care units, NGOs and the private sector, as it is an important way to reduce unplanned pregnancies.
- Providing the necessary incentives and facilities for the private sector to raise its contribution to service provision during the crisis period, because there is room for expansion, especially that private sector resources, unlike those of the public sector, have not been fully mobilized to face the crisis.
- Providing the necessary financing to purchase contraceptive methods, and supporting families to obtain them at an affordable price.
- Using leading international experiences in converting some types of methods that require a service provider, such as injections, for example, into self-care methods by purchasing types that can be used without direct contact with the health system.

- Conducting a large-scale awareness campaign in Egypt of each method, its price, places of availability, possible side effects and how to handle them.
- Adopting pre-distribution strategies (providing women with enough for a period of 3, 6 or 12 months) to reduce the need to return to health outlets to obtain the methods. While this will reduce contact with the health system, it will place more pressure on the value chain. Hence, the ministry must strive to achieve an optimal balance between reducing the need to return again to obtain the method and satisfying the needs of the largest possible number of women.

٢. Short-term actions:

- Expediting the issuance of the executive regulations for the new NGO law, in order for the civil sector in general to be able to practice its activities normally. Next, incentives should be provided to the civil sector to encourage it to provide family planning services.

٣. Medium-term actions:

- The need for accurate and constantly updated statistical estimates of the actual need and use of methods in Egypt. This requires:

- Automating the monitoring, evaluation and information gathering system in the Ministry of Health instead of relying on the paper-based system.
- Promptly conducting the population health survey, and committing to implementing it regularly on time.
- Building an accurate mathematical model that can employ the available data to predict the future use and requirements of each type of method in Egypt, and determine the volume of purchases needed of each method based on model estimates.
- Establishing a mechanism for effective and rapid handling of any similar crises in the future, which includes dividing the service delivery points into two parts according to a clear plan: a regular part, and a crisis part that moves immediately and automatically when the crisis breaks out.

٤. Structural reforms

- In general, the population issue must be managed in a well-governed manner by ending the affiliation of the National Population Council to the Ministry of Health and make it an independent body in charge of developing plans and policies

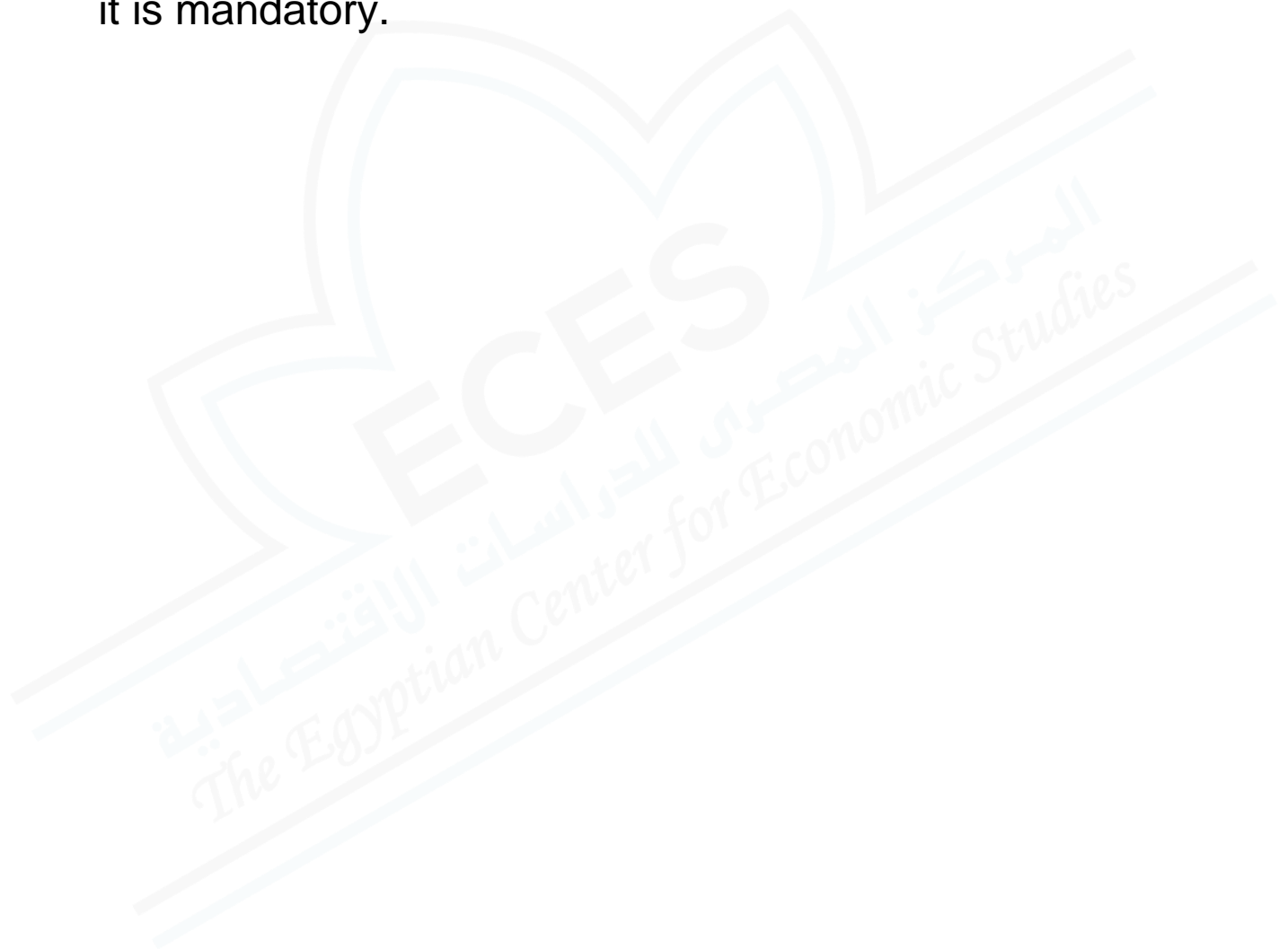
and coordinating efforts between all parties concerned with the population issue, including family planning, in addition to monitoring and evaluating the implementation of these plans.^{١٢}

- Forming a unified procurement committee that includes the private and government sectors, pharmacies, military and police hospitals, to obtain family planning methods at a better price.
- Egypt joining the unified procurement system of the United Nations Population Fund.
- Exemption of family planning methods from any taxes.
- **To overcome the problem of insufficiently trained personnel, the following must be done:**
 - Establish a central body for training service providers, as an independent branch in the Ministry of Health that reports directly to the Deputy Minister.
 - Training of service providers in central hospitals to act in turn as trainers for service providers in the primary care sectors.

^{١٢}The Egyptian Center for Economic Studies devoted a detailed study for the population policy in terms of the elements of its success and the optimal institutional form, which can be viewed through the following link: <https://bit.ly/3fyRyT4>

- Make training on providing family planning services a prerequisite for graduation from medical and nursing colleges (during the internship period).
- Overcoming the shortage of female doctors by:
 - Licensing nurses to provide family planning services, including IUD installation, after obtaining specialized training.
 - Mobile teams in villages, universities, schools and large companies, provided that they consist of a male and female doctor and work according to a strict weekly schedule.
 - That the follow-up and evaluation process be carried out by an agency independent of the Ministry of Health, in which the public, private and civil sectors are represented.
- A protocol contract with the Ministry of Communications to provide health units with the technological infrastructure at low prices and easy payment terms (internet, computers and databases).
- Integrating the private sector into the ministry's information system, so that the size of its inventory and the quality of service provision can be known.

- Increasing the number of female rural leaders in the neediest governorates, and distributing the tasks assigned to them according to their characteristics.
- Include reproductive and sexual health education in school curricula from the primary level to university level, provided that it is mandatory.



Appendix

Assumptions of Moving from one means to another (displacement):

١. The transition from column to row (unscientific) occurs. A 100 percent means that there is no transition while, Zero means a complete transition.
٢. More weight has been placed on the progesterone pill because, it is most appropriate in times of crisis, according to the recommendations of the Royal College of Obstetrics and Gynecology.
٣. As for long term methods: Zero means removing the usual pattern while, 100 percent means not removing it at all due to service disruption.
٤. For Example: number 0

Type of pills

Type of shots

Long term methods

Scenario A: Minor/ Medium Disruptions

	Sterilization	IUD	Implanon	Injection: a service provider	Injection: self-administered	Pills	Condoms	Female condom (CDC)	EC	SDM	Other	Injection	COC	POP	Service provider	Self-administered	Percentage
Sterilization	20%	15%	20%	20%		25%	0%				0%	20%	10%	90%			
IUD	20%	40%	10%	20%	5%	20%	0%	0%	3%	3%	0%	25%	30%	70%	80%	20%	50%
Implanon		0%	50%	20%	5%	20%	0%	0%	3%	3%	0%	25%	30%	70%	80%	20%	50%
Injection				50%	10%	35%	0%	0%	3%	3%	0%	60%	30%	70%	83%	17%	
Pills				0%	5%	90%	2%	0%	2%	2%	0%	5%	80%	20%	0%	100%	
Condoms				0%	0%	0%	95%	0%	3%	3%	0%	0%	30%	70%	0%	0%	
Other	0%	0%	0%	0%		0%	0%				100%	0%	10%	90%			

Scenario B: Major Disruptions

	Sterilization	IUD	Implanon	Injection: a service provider	Injection: self-administered	Pills	Condoms	Female condom (CDC)	EC	SDM	Other	Injection	COC	POP	Service provider	Self-administered	Percentage
Sterilization	0%	0%	10%	20%		70%	0%				0%	10%	10%	90%			
IUD		5%	5%	10%	10%	50%	10%	0%	5%	5%	0%	20%	10%	90%	50%	50%	80%
Implanon		0%	10%	10%	10%	50%	10%	0%	5%	5%	0%	20%	10%	90%	50%	50%	80%
Injection				10%	30%	45%	5%	0%	5%	5%	0%	40%	10%	90%	25%	75%	
Pills				0%	5%	85%	0%	0%	5%	5%	0%	5%	80%	20%	0%	100%	
Condoms				0%	0%	10%	80%	0%	5%	5%	0%	0%	10%	90%	0%	0%	
Other	0%	0%	0%	0%		0%	0%				100%		0%		10%	90%	

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