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17 REASONS TO INVEST IN FAMILY PLANNING IN PAKISTAN

Accelerating Achievement of the Sustainable Development Goals



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CONTENTS

Introduction	1
People	2
SDG Goal 1: No Poverty	2
SDG Goal 2: Zero Hunger	3
SDG Goal 3: Good Health and Well-being.....	5
SDG Goal 4: Quality Education.....	5
SDG Goal 5: Gender Equality.....	6
Planet	8
SDG Goal 9: Industry, Innovation, and Infrastructure and Goal 11: Sustainable Cities and Communities	8
SDG Goal 6: Clean Water and Sanitation; Goal 7: Affordable and Clean Energy; Goal 12: Responsible Consumption and Production; Goal 13: Climate Action; Goal 14: Life Below Water; and Goal 15: Life on Land.....	9
Prosperity	10
SDG Goal 8: Decent Work and Economic Growth	10
Peace	11
SDG Goal 10: Reduced Inequalities and Goal 16: Peace, Justice, and Strong Institutions	11
Conclusion	12
References	13

LIST OF FIGURES

Figure 1: Estimates for Total Fertility Rate in South Asia	2
Figure 2: Estimates for Total Fertility Rate in Pakistan, Wealth Status	3
Figure 3: Comparison of Total Fertility Rates in South East Asia by Wealth Status	3
Figure 4: Percent of Children Under Age Five Classified as Chronically Malnourished.....	4
Figure 5: Percent of the Total Primary-Level Population (Ages 5–9) Currently Out-of- School, by Province and Sex	6
Figure 6: Use of Modern Contraception, Married Women Ages 15–49.....	7
Figure 7: Total Population of Pakistan by Setting, 1990–2050	8
Figure 8: Total Population of Pakistan by Age Cohort and Sex, 2017.....	11

INTRODUCTION

Voluntary family planning provides women and their families with options to manage their intended family size and plan the desired timing and spacing of pregnancies. In doing so, family planning reduces the risk of health and illness to women and children. Family planning further contributes to reductions of a population's fertility (Bongaarts, 1982).

Reductions in fertility promote economic growth and lessen the pressure of rapid population growth on social, environmental, and economic infrastructures to meet growing demand. A country's fertility is impacted by contraceptive use, postpartum insusceptibility, induced abortion, and marriage patterns (Bongaarts, 1982). Out of these four dimensions, a focus on family planning can be a cost-effective investment for Pakistan towards achieving the Sustainable Development Goals (SDGs). This paper will draw connections between family planning and the promotion of Pakistan's people, natural resources, peace, and economic prosperity.¹

During the 2012 London Summit on Family Planning, Pakistan committed to increasing its total contraceptive prevalence rate for married women to 55 percent and providing universal access to reproductive health by 2020. Pakistan further committed to ensuring that contraceptive services are included in the essential services package and to strengthening the quality and reach of the Lady Health Worker Program (female community health workers primarily servicing rural areas in Pakistan).

Pakistan's earlier commitments to the Millennium Development Goals, set to be achieved by 2015, focused the nation's socioeconomic development efforts and catalyzed policy and programmatic attention towards poverty reduction, gender equality, health, education, and environmental sustainability. While great progress was made towards achieving this pursuit, only one of the eight Millennium Development Goals was realized: Goal 7 (ensure environmental sustainability). Progress towards other essential health commitments—Goal 4 (reduce child mortality), Goal 5 (improve maternal health), and Goal 6 (combat HIV, AIDS, and malaria)—lagged behind the national targets.

Pakistan *Vision 2025* recognizes the importance of family planning to improving overall health and economic prosperity towards the nation's development. The vision commits to an increase in spending on health to 3 percent of the country's gross domestic product. As outlined in the vision's first pillar, "Putting People First," developing human and social capital are direct actions promoting the availability and uptake of family planning services. Critical steps include:

- Expanding the Lady Health Worker Program
- Lowering the fertility rate
- Improving the provision of primary care, particularly in rural areas
- Increasing the availability of healthcare providers trained in family planning located at basic health units and rural health centers

While these steps are acknowledged in the overall national document, indicators for success in family planning programming are noticeably absent from the goals set for 2025. As a result of the 18th amendment to the Pakistan Constitution, which devolves governance over the country's public health sector to provincial governments, there exists an urgent need to

¹ This paper is based on the following work: Starbird, E., M. Norton, and R. Marcus. 2016. "Investing in Family Planning: Key to Achieving the Sustainable Development Goals." *Global Health: Science and Practice* 4(2):191-210.

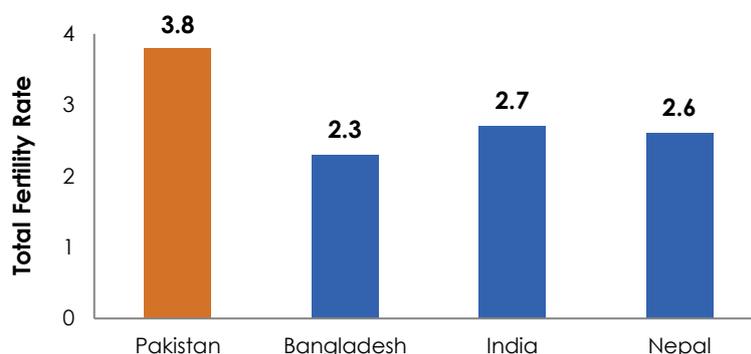
raise local awareness of the links between population and development and the importance of family planning as a key development strategy.

Pakistan's rapid population growth places great strain on the government to adequately respond to the needs of the populace. A firm commitment to strong family planning and reproductive health in Pakistan could not only improve the health of the people, but contribute to a wide range of transformational development opportunities, including reduction of poverty; conservation of natural resources; promotion of gender equality; mitigation of the impact of climate change; reduction in the potential for conflict, particularly amongst youth; and much more. This paper details the major contributions family planning can make across multiple sectors, beyond health, in Pakistan.

PEOPLE

The population increased at an average annual growth rate of 2.4 percent from 1998 to 2017 (Government of Pakistan). Without strengthening efforts to slow population growth, the population will likely increase from the current 208 million people to 377 million by 2050 (Avenir Health, 2017). Currently, Pakistan's total fertility rate (TFR) remains the highest in the region, at 3.8 births per woman (Figure 1). The country must prepare to respond to increased social and economic demand on existing health, educational, and employment systems as a result of population growth. In doing so, prioritizing the promotion and provision of voluntary family planning services to slow population growth will better prepare the government of Pakistan to respond to the needs of its population.

Figure 1: Estimates for Total Fertility Rate in South Asia



Sources: IIPS, 2007; MOHP, 2012; NIPORT, 2013; NIPS, 2013

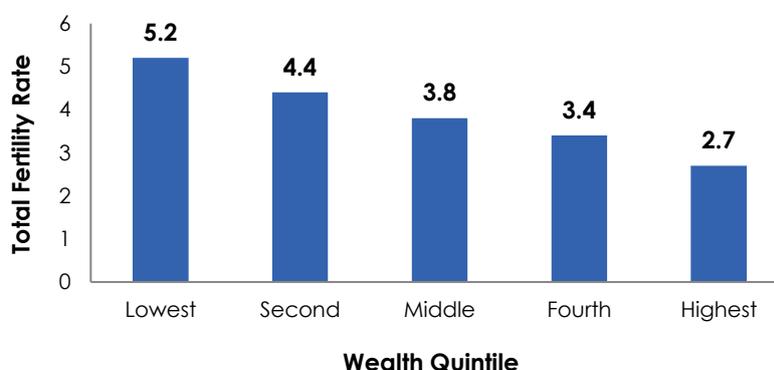
SDG Goal 1: No Poverty

End poverty in all its forms everywhere

Pakistan successfully reduced the proportion of its population living below the poverty line (measured by per capita food and non-food expenditure per month) by more than half, from 26.1 percent in 1990 to 12.4 percent by 2011 (MPDR, 2013). Economic growth specifically benefited the bottom 40 percent of the population, primarily through productivity gains amongst nonagricultural workers, as well as worker remittances from abroad and cash transfers (Lopez-Calix et al., 2014). Although the nation has seen drastic increases in the proportion of its population below the poverty line (calculated as per capita monthly consumption below PKR 1,777 in 2011), a large portion of the population, approximately one-third, remains right above the poverty line and are vulnerable to returning into poverty (Lopez-Calix et al., 2014).

In Pakistan, larger household size is associated with higher rates of poverty (Majeed and Malik, 2014). Furthermore, the likelihood for poverty increases for a household by about 22 percent with the addition of just one person to the familial unit (Majeed and Malik, 2014). Similar trends exist in relation to fertility: low fertility in Pakistan is associated with higher income (Figure 2).

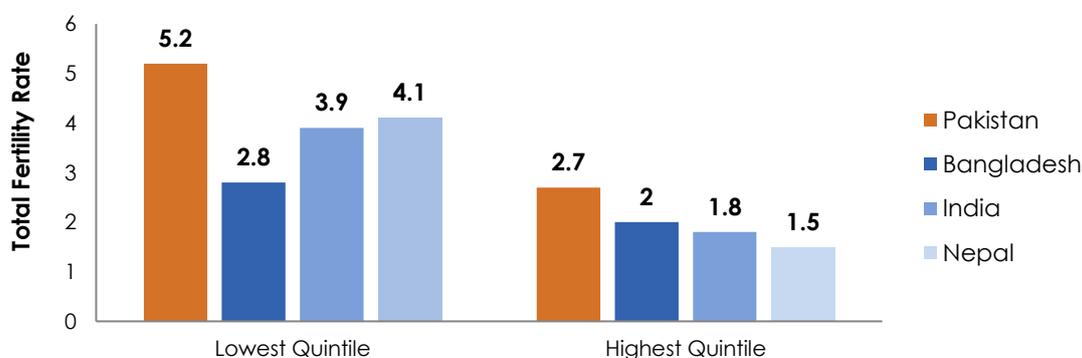
Figure 2: Estimates for Total Fertility Rate in Pakistan, Wealth Status



Sources: NIPS, 2013

Similarly, poorer women residing in other South Asian nations have higher-fertility practices compared to their wealthier counterparts (Figure 3). However, compared to other South Asian nations, Pakistan maintains the highest TFR across wealth categories. A strong investment in family planning, alongside a commitment to social and economic development, can promote economic growth and stability for many Pakistani families.

Figure 3: Comparison of Total Fertility Rates in South East Asia by Wealth Status



Sources: IIPS, 2007; MOHP, 2012; NIPORT, 2013; NIPS, 2013

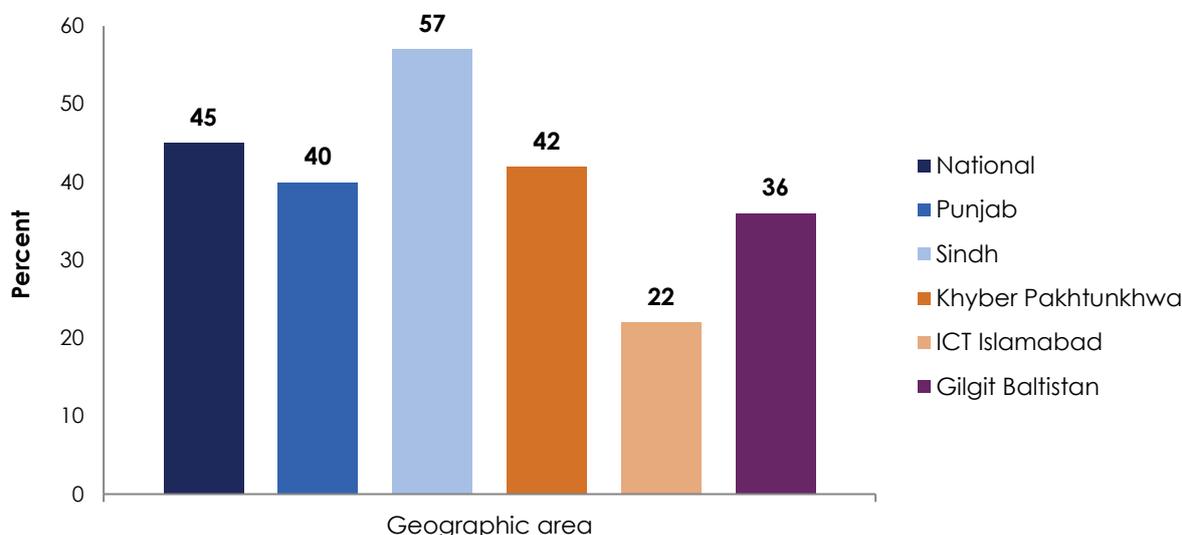
SDG Goal 2: Zero Hunger

End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Pakistan’s performance regarding nutritional status for children under age five leaves much room for improvement. Nationally, 45 percent of children in this age group are stunted, 11 percent are wasted, and 30 percent are underweight (NIPS, 2013). Cohorts of children who are significantly short for their age are considered stunted, which indicates poor nutritional intake and is a sign of chronic malnutrition. A child who is chronically malnourished has missed a critical window for intervention and will likely suffer long-term developmental challenges.

At 57 percent, the percentage of chronically malnourished children under age five in Sindh province is far above the averages for Pakistan as a whole and for other provinces (Figure 4) (NIPS, 2013). Poor nutritional status is more prevalent in rural versus urban settings.

Figure 4: Percent of Children Under Age Five Classified as Chronically Malnourished



Sources: NIPS, 2013

Birth spacing can improve nutritional outcomes. The World Health Organization suggests optimal birth spacing should be at least 24 months between the birth of one child and conception of another (Naik and Smith, 2015). An analysis of demographic health survey outcomes from 2006–2012 showed that an increase in spacing between births decreases the likelihood for a child to be stunted and underweight (Rutstein and Winter, 2014). Family planning allows women to safely space their births and better protect the health of their children.

In Pakistan, approximately 6.4 million married women of reproductive age have an existing unmet need for family planning (NIPS and ICF International, 2013; Government of Pakistan); 44 percent of this need reflects a desire for spacing.² Meeting the demand for family planning services has a clear implication for improving the nutritional status of children.

Further, family planning can support positive nutritional outcomes in the population at large. Population growth inevitably places increasing pressure on food production to meet growing demand. While Pakistan’s cultivated area of land for food production increased by 40 percent in the last 60 years, its population quadrupled, creating a food supply-demand gap (Ahmad and Farooq, 2010). Pakistan’s agriculture sector would have to expand by at least 4 percent annually to adequately meet growing demand from its population (Mustafa et al., 2013). Balochistan, the province with the highest TFR (4.2), also suffers from extreme food insecurity, with over 65 percent of the population categorized as food insecure (Arshad and Shafiqat, 2012; NIPS, 2013).

² Calculations applied *Pakistan Demographic Health Survey 2012–13* estimates for women in union and unmet need (total and spacing) to UNDP 2015 World Population Prospects 2015 and White Ribbon Alliance estimates.

SDG Goal 3: Good Health and Well-being

Ensure healthy lives and promote well-being for all ages

High-risk pregnancies are those that are spaced too closely together, that occur too often, or that occur when the woman is younger than age 18 or over age 35 (Brockman et al., 2003). Unintended and high-risk pregnancies can result in unsafe abortions, medical complications, and maternal and neonatal death. Family planning seeks to reduce the proportion of women at risk of these complications by averting the number of unintended and high-risk pregnancies.

If the contraceptive needs of approximately 45.7 million couples in Pakistan were met, the country could prevent:³

- 7.3 million unintended pregnancies
- 34 million induced abortions
- 173,900 infant (under age one) deaths
- 74,300 child (under age five) deaths due to improved birth spacing
- 8,500 maternal deaths

Overall, family planning efforts in Pakistan will allow women to better plan for the number and timing of children they desire while also promoting healthy births and deliveries.

SDG Goal 4: Quality Education

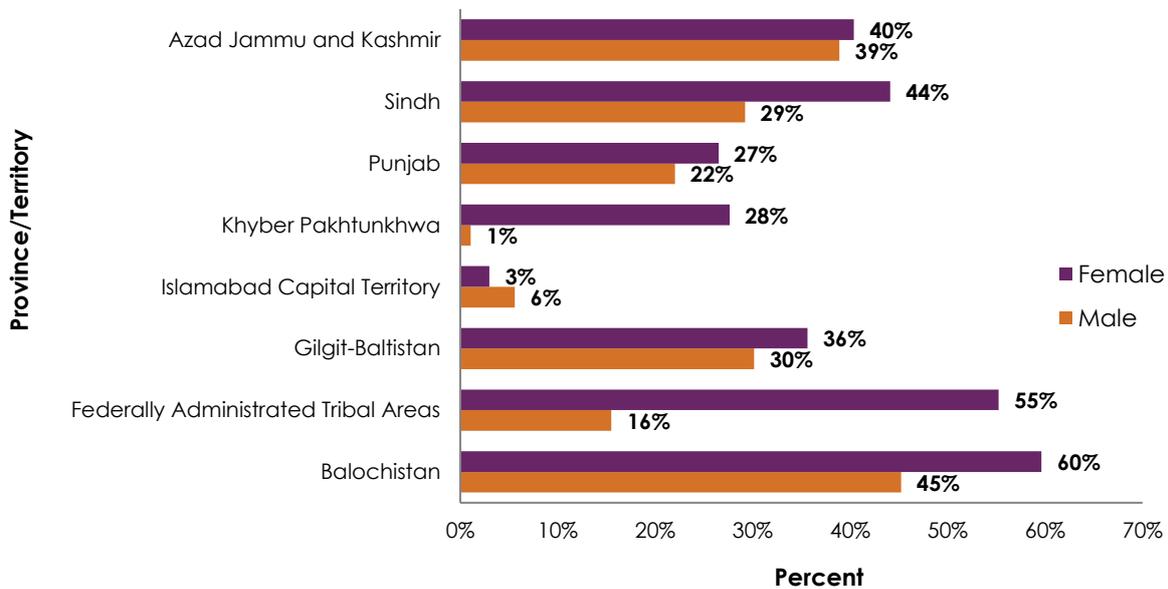
Ensure inclusive and quality education for all and promote lifelong learning

The education system in Pakistan struggles to sufficiently meet the demands of the school-age population (ages 5–14): approximating 52.7 million young people (NIPS and ICF International, 2013; Government of Pakistan). One-third of primary school children are not in school (NEMIS, 2016). As education levels increase, a larger share of children no longer attend school: more than one-quarter of primary-age youth (28%) are currently out of school, and three out of five high school-age children are not enrolled in school (NEMIS, 2016).

At the primary school level, the share of students out of school is greatest in Balochistan, where 52 percent of primary-age children are currently not enrolled (NEMIS, 2016). Moreover, of the 6.1 million primary-age students currently out of school in Pakistan, more than half (58%) are girls (NEMIS, 2016). This trend persists across all provinces (Figure 5). The gender imbalance for out-of-school youth is most pronounced in Khyber Pakhtunkhwa, where 28 percent of primary-level females are out of school, while only one percent of males are not enrolled (Figure 5).

³ Estimates of the potential impact from USAID investment in contraceptives in Pakistan through the DELIVER project. These calculations are based off of results from Marie Stopes International's version 3 of the Impact 2 tool (2015).

Figure 5: Percent of the Total Primary-Level Population (Ages 5–9) Currently Out-of-School, by Province and Sex



Sources: NEMIS, 2016

In addition to addressing low access to education, other challenges faced by the education sector include poor quality of education, gender inequities, inadequate funding, and low supervisory capacity to manage the education system at the district and provincial levels (Education for All, 2015). These challenges intensify with continued spikes in the youth population.

Strong family planning programs, over time, affect the size and structure of a population, thereby impacting the necessary resources required to provide sufficient social and economic services. Comparisons of two projected demographic scenarios—increased fertility versus a reduction in TFR—show drastic differences in potential outcomes for the education sector.⁴ In a scenario with increased fertility in Pakistan, 12 million more students will enrol in primary and secondary schools, compared to a scenario with a reduction in TFR. The education sector would have to increase its capacity to meet the additional demand and hire 372,000 more teachers compared to a scenario where the government invests in family planning (Avenir Health, 2017).

SDG Goal 5: Gender Equality

Achieve gender equality and empower women and girls

SDG Goal 5 seeks to end all forms of discrimination and violence against women and girls and improve the status of women worldwide. It aims to do this by addressing gender imbalances in health, education, and employment, while also promoting female leadership and empowerment. To achieve this goal, nations must reach a target of ensuring universal access to sexual and reproductive health and reproductive rights.

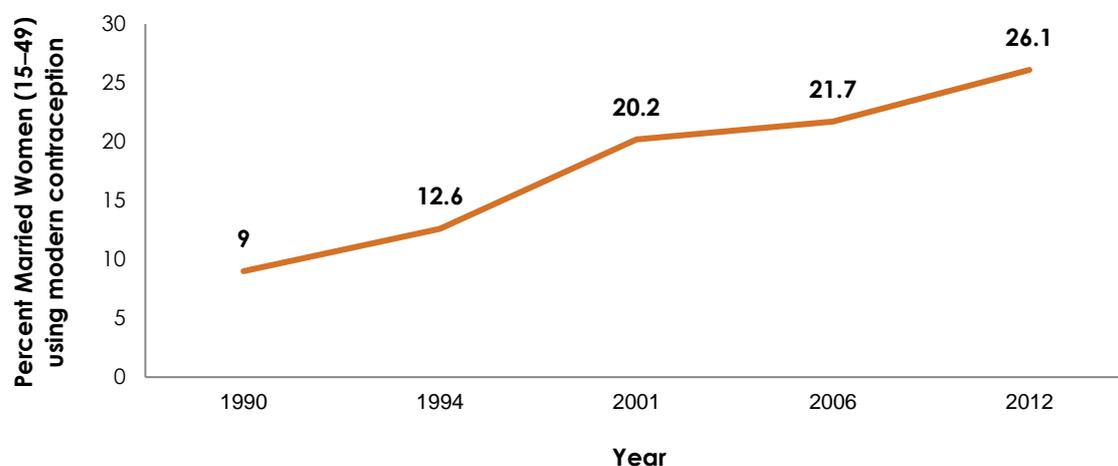
⁴ These estimates are based off of results from [RAPID](#), a model that projects the impact of demographic change on social and economic development—specifically, the resources required to meet increased demand in the health, education, agriculture, and urbanization sectors.

There is room for improvement in Pakistan’s performance in gender inequality. The nation ranked 143 out of 144 countries in the 2017 gender inequality index (WEF, 2017). This ranking was based off the country’s overall performance in three dimensions: reproductive health, empowerment, and economic activity. Pakistan can continue to improve its stance in the international sphere by providing greater secondary-education opportunities to women and increasing female participation in the labor force and the number of female seats in the parliament. Family planning is a proven mechanism to assist women with continued education and entering the workforce.

A woman’s autonomy to make decisions over her own health often impacts if and how she will access sexual and reproductive health services. A study in rural Pakistan found that young women typically are not able to make the final decision about reproductive health issues, such as contraceptive use. While young women may participate in conversations about contraceptive use, older women are often considered the cultural authority in influencing decision outcomes, and men are responsible for the final decision (Mumtaz and Salway, 2009).

Women’s decision-making autonomy in Pakistan is positively associated with contraceptive use (Saleem and Bobak, 2005). Programming to increase women’s access to sexual and reproductive health services in Pakistan should pay attention to women’s ability to act on desires for intended family size and spacing. Figure 6 indicates a steady increase in contraceptive use over the last twenty years, but there remains a great opportunity for more improvement. In fact, Pakistan ranks far below other nations in the region: current modern method use is 47 percent in Nepal, 59 percent in Bangladesh, and 48 percent in India (IIPS, 2007; MOHP, 2012; NIPORT, 2013; NIPS, 2013).

Figure 6: Use of Modern Contraception, Married Women Ages 15–49



Sources: NIPS, 2013

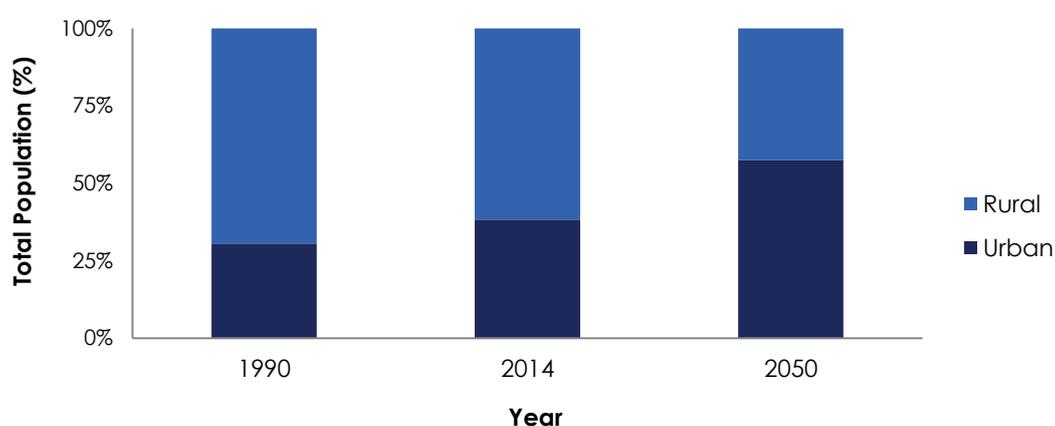
PLANET

SDG Goal 9: Industry, Innovation, and Infrastructure and Goal 11: Sustainable Cities and Communities

- **Goal 9: Build resilient infrastructure, promote sustainable industrialization, and foster innovation**
- **Goal 11: Make cities inclusive, safe, resilient, and sustainable**

Nearly 40 percent of Pakistan’s population resides in urban settings and the urban population is estimated to increase to 57 percent by 2050 (Figure 7). In absolute numbers, the nation stands to reach an urban population of 155.7 million people by 2050. Karachi alone grows at an annual rate of 2.7 percent and is expected to reach 24 million people by 2030 (UN DESA, 2014).

Figure 7: Total Population of Pakistan by Setting, 1990–2050



Sources: UN DESA, 2014

The government faces increasing pressure to respond to substantial infrastructural, health, security, and education demands resulting from rapid urbanization. Shifting demographic trends have great potential to slow the rate of urbanization. A simulated comparison of two family planning scenarios, increased versus reduced fertility in Pakistan, suggests a major impact on urbanization as a result of demographic change.⁵ An increase in the population’s fertility would result in an additional 2.6 million urban households and a 4.2 million increase of youth residents (ages 12–25) by 2045 in Pakistan, compared to a scenario with reduced fertility (Avenir Health, 2017). By not investing in family planning, the nation will likely face a significant influx of residents in urban centers, causing greater demand on existing infrastructure to meet the increased need.

⁵ These estimates are based off of results from [RAPID](#), a model that projects the impact of demographic change on social and economic development—specifically, the resources required to meet increased demand in the health, education, agriculture, and urbanization sectors.

SDG Goal 6: Clean Water and Sanitation; Goal 7: Affordable and Clean Energy; Goal 12: Responsible Consumption and Production; Goal 13: Climate Action; Goal 14: Life Below Water; and Goal 15: Life on Land

- **Goal 6: Ensure Access to Water and Sanitation for All**
- **Goal 7: Ensure Access to Affordable, Reliable, Sustainable, and Modern Energy for All**
- **Goal 12: Ensure Sustainable Consumption and Production Patterns**
- **Goal 13: Take Urgent Action to Combat Climate Change and Its Impact**
- **Goal 14: Conserve and Sustainably Use the Oceans, Seas, and Marine Resources**
- **Goal 15: Sustainably Manage Forests, Combat Desertification, Halt and Reverse Land Degradation, and Halt Biodiversity Loss**

Rapid population growth increases consumption of natural resources such as food, water, energy, and land. Family planning, in turn, helps mitigate some of these impacts by shifting demographic change, reducing demand, and conserving natural resources.

Rapid population growth can be linked to the magnitude and impact of climate change affecting the entire planet. Natural resources are declining as a result of climate change and environmental variability. Rapid population growth increases demand for these declining resources and often contributes to mismanagement of resource availability and distribution (Stephensen et al., 2010). Additionally, population growth may increase the impact of climate change on a population by forcing migration to environmentally marginal areas (areas affected by soil/forest degradation, water scarcity, etc.) or those at risk for extreme disasters caused, in part, by climate change.

Because of climate change, population growth, and urbanization, water availability per capita in South Asia has declined by approximately 70 percent since 1950 (Langton and Prasai, 2012). Pakistan's availability of water declined from approximately 5,260 cubic meters in 1951 to about 1,032 cubic meters in 2016 (Wasif, 2017). Estimates suggest that Pakistan will be considered water scarce—defined as less than 500 cubic meters per capita per year—by 2035 as a result of “a growing population, inefficient supply management, distribution inequalities, and the effects of climate change” (Mustafa et al., 2013, p. 6). It behooves the nation to tackle its rapid population growth in order to better manage the pressing challenges surrounding water scarcity.

Pakistan has made great progress towards ensuring access to improved sanitation, increasing from 30 percent coverage in 1990 to 74 percent coverage in 2014 (PBS, 2014). However, 49 million people still lack access to improved sanitation facilities.⁶ This number is likely to increase as the population continues to grow.

Pakistan faces a severe energy crisis if no immediate action is taken to address the growing demand for energy, energy waste, and poor governance over the energy sector. Rapid urbanization fuels increased demand for energy in Pakistan's cities. Peak demand from 2014–2015 was approximately 20,800 megawatts (MW) and is estimated to increase by 10,000 MW over capacity by 2019 (Kugelman, 2015). Estimates suggest that demand for energy will continue to grow (and, in fact, double) over the next 10 years. The nation lost approximately 4 percent of its gross domestic product in past years and has much more to

⁶ Calculations applied Pakistan Social and Living Standards Measurement Survey 2013–14 (PBS, 2014) estimates for access to improved sanitation to UNDP 2015 World Population Prospects for 2015 total population (combined sexes).

lose in human and social growth and development if the energy situation is not resolved (Kugelman, 2015).

Fish is not a primary component of a traditional Pakistani diet; as such, fish consumption in Pakistan is low at approximately 2.0 kg/year per capita (FAO, 2009). However, fish remains a primary source of food and income in coastal cities. Over 70 percent (71%) of marine resource production in Pakistan comes from the Sindh province, where coastal communities heavily depend on the fishing industry for their sustenance and livelihoods. While heavily reliant on the fishing industry, these households remain some of the poorest in the nation (Khan, 2011). Population growth in Pakistan has resulted in increased waste and pollution, negatively impacting marine environments and quickening the loss of fish species (Yaqoob, 2002). Promoting slow population growth will allow for greater preservation of vital natural resources.

Pakistan increased the percentage of forest coverage (total area under forests and planted trees out of total land area) from 4.8 percent in 1990 to 5.2 percent in 2013, yet the nation was off track to reach the 6 percent Millennium Development Goal by 2015 (UN, 2013). Growth in population density has a negative impact on forest land area availability, likely due to increased wood use for fuel and infrastructure in rural areas (Afzal, 2009; Ahmed et al., 2015).

Factors such as population growth, urbanization, and industrialization contribute to rapid environmental degradation in Pakistan, which, in turn, is believed to play a major part in the recent natural disasters faced by the country, such as the 2010 and 2011 floods (Ahmed et al., 2015). Conversely, family planning slows urbanization and population growth and can mitigate the impact of environmental degradation by lessening the pressure on critical natural resources.

PROSPERITY

SDG Goal 8: Decent Work and Economic Growth

Promote inclusive and sustainable economic growth, employment, and decent work for all

In most parts of the world, people are living longer, in part from improved child survival, stronger social and economic policies, and advances in medicine and technology. Countries stand to see potential economic gains from longer life expectancy if they witness lower fertility while also investing in critical social and economic development programs. In doing so, the population structure shifts from a disproportionate amount of young people to a more balanced distribution of age cohorts.

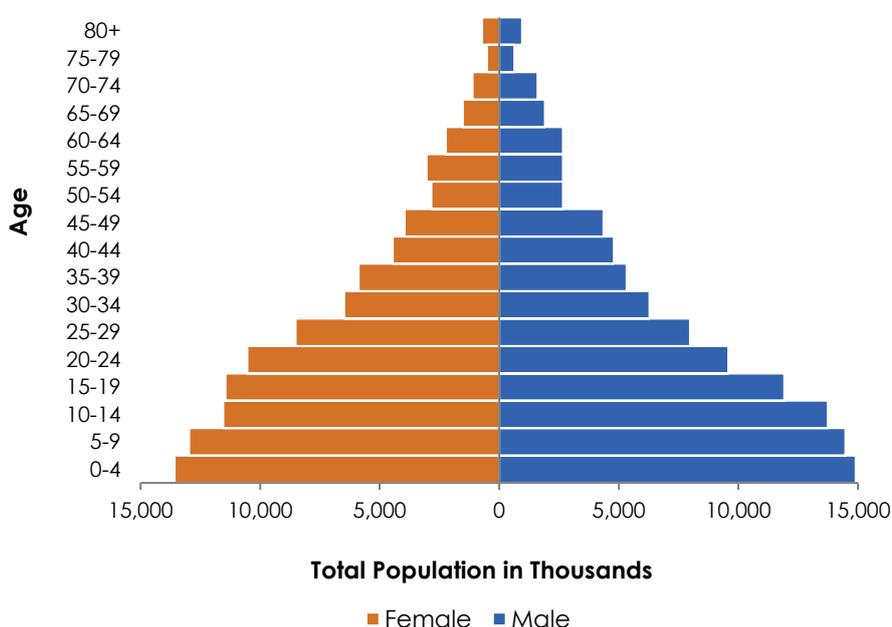
Pakistan currently sits in the middle stage of this demographic transition. If, among other changes, the country successfully lowers the rate of fertility, the nation would have an opportunity to accelerate economic growth through the power of the demographic dividend. Declines in fertility rates would ultimately result in a reduction in the dependency ratio and an increase in the proportion of the working-age population. This proportional increase in working-age population, if properly planned for, can increase worker per capita output and thereby stimulate economic growth.

Currently, the country's largest population age cohorts can be considered youth (Figure 8). If birth rates fall in coming years, the large population of today's young people in Pakistan will continue to age and contribute substantially to working and saving, if proper employment and educational infrastructure is in place. Estimates predict that the working-age population will increase from 118 million in 2017 to 244 million in 2045 (Avenir Health, 2017). The country has a tremendous challenge to meet the educational, employment, and

infrastructural challenges necessary to grow a productive workforce. If Pakistan fails to meet the demand of a high working-age population, the country risks great political and civil instability

To reap a demographic dividend, Pakistan will also have to pay attention to gender equity. Only 20 percent of the female working-age population is currently employed. Achieving a demographic dividend will result in more women participating in the labor force, and will likely be associated with delayed childbearing and fewer children. A study in Punjab found that 67 percent of female participants reported that personal or familial responsibilities prevented them from working. Fewer and better-spaced children will allow women to further their education and participate in the labor force. Reduced family sizes, as a result of fertility decline, also encourage households to save more income and consume less (Sathar and Zaidi, 2009).

Figure 8: Total Population of Pakistan by Age Cohort and Sex, 2017



Source: NIPS and ICF International, 2013; Government of Pakistan

PEACE

SDG Goal 10: Reduced Inequalities and Goal 16: Peace, Justice, and Strong Institutions

- Goal 10: Reduce inequality within and among countries
- Goal 16: Promote just, peaceful, and inclusive societies

In the 1980s–90s, internal migration occurred in Pakistan as a result of climate change, primarily towards urban settings (primarily Karachi and Islamabad). This occurred due to a multitude of environmental push factors (water scarcity, deforestation, floods, etc.) combined with population growth, low access to resources, and unemployment (Reuveny, 2007). Ethnic and social groups who traditionally hold animosity towards each other in rural settings are forced into close contact in urban centers, often competing for limited resources. Rapid urbanization, in turn, can result in increased conflict and violence in these urban settings (Homer-Dixon, 1998).

Adequate preparation for the growing youth bulge remains a significant challenge for Pakistan. Poor educational opportunities and a lack of adequate employment for youth might lead to growing instability within that cohort. Without sufficient educational and economic opportunities, segments of the youth population remain vulnerable to radical political and religious influences, which contribute to great national and regional conflict (Fair et al., 2005).

Water use conflicts between Pakistan and India may arise over the Indus River, a primary water source for both countries. The Indus River serves as the main water source for nearly 65 percent of Pakistan's agricultural land and serves over 180 million Pakistanis (Pappas, 2011). Rapid population growth and urbanization places increased pressure on the Indus River to respond to the growing demand. The quality of the Indus River water continues to decline as a result of environmental degradation, poor pollution management, climate change, and other factors (Pappas, 2011). Growing water pressures and political tensions between the two nations have intensified disputes over water use.

CONCLUSION

Family planning and the resulting decrease in fertility has the potential to not only save the lives of women and children, but also to improve economic development and better situate the public sector to respond to increasing challenges associated with education, urbanization, climate change, and environmental degradation. Family planning allows men and women to manage the desired size of their family units, thereby allowing more opportunities to engage in the workforce, save money, and reduce consumption. Each of these activities has lasting impacts on the health and well-being of the larger population. Family planning should remain a priority in developing the new agenda to achieve the Sustainable Development Goals.

REFERENCES

- Ahmad, M. and U. Farooq. 2010. "The State of Food Security in Pakistan: Future Challenges and Coping Strategies." *The Pakistan Development Review*, 903–923.
- Ahmed, K., M. Shahba, A. Qasim, and W. Long. 2015. "The Linkages Between Deforestation, Energy and Growth for Environmental Degradation in Pakistan." *Ecological Indicators* 49: 95–103.
- Afzal, M. 2009. "Population Growth and Economic Development in Pakistan." *The Open Demography Journal* 2: 1–7.
- Arshad, S. and A. Shafqat. 2012. "Food Security Indicators, Distribution and Techniques for Agriculture Sustainability in Pakistan." *International Journal of Applied* 2(5).
- Avenir Health. 2017. Spectrum Model, version 5.62 beta 38 (RAPID Model). Glastonbury, CT: Avenir Health.
- Bongaarts, J. 1982. "The Fertility-inhibiting Effects of the Intermediate Fertility Variables." *Studies in Family Planning* 179–189.
- Brockman, S., I. Stout, K. Marsh, and A. Conde-Agudelo. 2003. *The Public Health Impact of Optimal Birth Spacing: New Research from Latin America and the Caribbean*. Washington, DC: CATALYST Consortium.
- The Deliver Project. 2014. "Saving and Improving Lives Through Increased Access to Contraceptives. Available at http://deliver.jsi.com/dlvr_content/resources/allpubs/logisticsbriefs/PK_ImpaBrieSaviImp_r.pdf.
- Fair, C., C. Grammich, J. DaVanzo, and B. Nichiporuk. 2005. "Demographics and Security: The Contrasting Cases of Pakistan and Bangladesh." *Journal of South Asian and Middle Eastern Studies* 28(4): 53–76.
- FAO. 2009. "Fishery and Aquaculture Country Profile: The Islamic Republic of Pakistan." Available at ftp://ftp.fao.org/fi/document/fcp/en/FI_CP_PK.pdf.
- Government of Pakistan, Ministry of Statistics, Statistics Division, Pakistan Bureau of Statistics. "Press Release on Provisional Summary Results of 6th Population and Housing Census - 2017."
- Homer-Dixon, T. and J. Blitt (Eds.). 1998. *Ecoviolence: Links Among Environment, Population, and Security*. Lanham, MD: Rowman & Littlefield Publishers.
- International Institute for Population Sciences (IIPS). 2007. *India National Family Health Survey (NFHS-3), 2005–06 (Vol. 1)*. Maharashtra, India: International Institute for Population Sciences.
- Khan, N. 2011. *Marine Resources in Pakistan: A Tentative Inventory*. Karachi: Pakistan Business Review.
- Kugelman, M. (Ed.). 2015. *Pakistan's Interminable Energy Crisis: Is There Any Way Out?* Washington, DC: Woodrow Wilson Center.

- Lopez-Calix, J., C. Mejia, D. Newhouse, and C. Sobrado. 2014. *Pakistan Poverty Trends, Scenarios and Drivers*. World Bank Policy Paper Series on Pakistan: PK 23/12. Washington, DC: World Bank Group.
- Majeed, M.T. and M.N. Malik. 2014. *Determinants of Household Poverty: Empirical Evidence from Pakistan (No. 57744)*. Munich: University Library of Munich.
- Ministry of Health and Population (MOHP) [Nepal], New ERA, and ICF International Inc. 2012. *Nepal Demographic and Health Survey 2011*. Kathmandu and Calverton, MD: MOHP, New ERA, and ICF International.
- Ministry of Planning, Development and Reform (MPDR) (2013). *Pakistan Millennium Development Goals Report 2013*. Islamabad, Pakistan.
- Mumtaz, Z. and S. Salway. 2009. "Understanding Gendered Influences on Women's Reproductive Health in Pakistan: Moving Beyond the Autonomy Paradigm." *Social Science & Medicine* 68(7): 1349–1356.
- Mustafa, D., M. Akhter, and N. Nasrallah. 2013. *Understanding Pakistan's Water-security Nexus*. Washington, DC: United States Institute of Peace.
- Naik, R. and R. Smith. 2015. *Impacts of Family Planning on Nutrition*. Washington, DC: Futures Group, Health Policy Project.
- National Education Management Information System (NEMIS), Academy of Educational Planning and Management, Ministry of Federal Education and Professional Training, and Government of Pakistan. 2016. *Pakistan Education Statistics 2014–2015 Report*. Islamabad: NEMIS, Academy of Educational Planning and Management, Ministry of Federal Education and Professional Training, and Government of Pakistan.
- National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ICF International. 2013. *Bangladesh Demographic and Health Survey 2011*. Dhaka, Bangladesh and Calverton, MD: NIPORT, Mitra and Associates, and ICF International.
- National Institute of Population Studies (NIPS) [Pakistan] and ICF International. 2013. *Pakistan Demographic and Health Survey 2012–13*. Islamabad and Calverton, MD: NIPS and ICF International.
- Pakistan Bureau of Statistics (PBS), Statistics Division. 2014. *Pakistan Social and Living Standards Measurement Survey (PSLM) 2013–14 National/Provincial*. Islamabad: Government of Pakistan.
- Pappas, G. 2011. "Pakistan and Water: New Pressures on Global Security and Human Health." *American Journal of Public Health* 101(5): 786–788.
- Reuveny, R. 2007. "Climate Change-induced Migration and Violent Conflict." *Political Geography* 26(6): 656–673.
- Rutstein, S.O. and R. Winter. 2014. *The Effects of Fertility Behavior on Child Survival and Child Nutritional Status: Evidence from the Demographic and Health Surveys 2006 to 2012*. Calverton, MD: ICF International.
- Saleem, S. and M. Bobak. 2005. "Women's Autonomy, Education and Contraception Use in Pakistan: A National Study." *Reproductive Health* 2(8): 1–8.
- Sathar, Z. and B. Zaidi. 2009. *Fertility Prospects in Pakistan*. New York: Population Division, United Nations Department of Social and Economic Affairs.

Stephenson, J., K. Newman, and S. Mayhew. 2010. "Population Dynamics and Climate Change: What are the Links?" *Journal of Public Health* 32(2): 150–156.

United Nations (UN). 2013. *The Millennium Development Goals Report 2013*. New York: United Nations.

United Nations, Department of Economic and Social Affairs (UN DESA), Population Division. 2014. *World Urbanization Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352)*. New York: United Nations.

Wasif, S. "Climate Change Impact: Per Capita Water Share Falls to 1,032 Cubic Metres." *The Express Tribune*, January 12, 2017.

World Economic Forum (WEF). 2017. *The Global Gender Gap Report 2017*. Geneva: WEF.

Yaqoob, M. 2002. "Cold Water Fisheries of Pakistan." FAO Fisheries Technical Paper: 101–106. Available at: <http://www.fao.org/docrep/005/y3994e/y3994eoc.htm>.

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