

Population and Development—Progress through Family Planning in Uttar Pradesh

September 2012

Authors: Dr. R.K Srivastava,¹ Dr. Honey Tanwar,¹ Dr. Priyanka Singh,¹ and Dr. B.C Patro¹
¹ Policy Unit

I. Introduction

This policy brief highlights the progress of Uttar Pradesh (UP) in achieving its reproductive and child health goals and the impact of increasing population growth on the health of the people and on overall development and resources of the state. The data presented are based on an analysis conducted by the Policy Unit¹ of the National Institute of Health and Family (NIHFW), with support from the Health Policy Project (HPP). Drawing from the National Family Health Survey (NFHS), Sample Registration System (SRS), Census 2011, Annual Health Survey, and Registrar General of India (RGI) Population Projections 2006, projections on the impact of UP's increasing population were developed using policy models, including DemProj and RAPID.² The brief serves as an update for national- and state-level policymakers and experts on the current status of UP's family planning (FP) programme and will help to further policy dialogue on issues of population and development in the state. It also provides insight into how a focus on family planning can help address challenges pertaining to other health indicators.

II. Increasing Population in Uttar Pradesh

UP is the most populous state in India. At the turn of the 20th century, the state was home to around 4.6 crore (46 million) people, a number that has more than quadrupled today and stands at around 20 crore (200 million) (Census 2011). Every sixth Indian is from UP.

Since independence, UP's population has increased by almost 10 million per decade between 1951 and 1971, by 20 million per decade between 1971 and 1991, and by 30 million between 1991 and 2011. At this rate, the population of UP is estimated to reach 310 million by 2051 (see Figure 1).

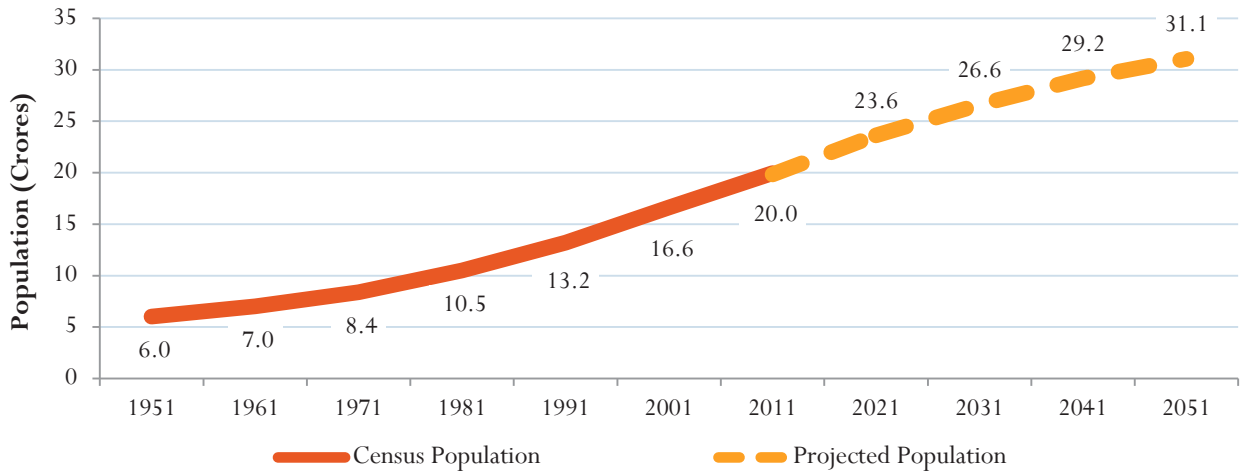
The annual population growth rate of UP is 1.83. It is almost at par with that of Madhya Pradesh (1.85) and lower than Rajasthan (1.94) and Bihar (2.24). But the larger population base in the state means a larger growth in absolute numbers (Census 2011). UP's population has quadrupled in the last 60 years, and the number of people added each decade continues to grow.

The population of Uttar Pradesh is more than that of Brazil, a country more than 2.5 times the size of India and fifth largest in the world.

1 The Policy Unit was established with initial support from the Health Policy Project, funded by the United States Agency for International Development. The unit's mission is to improve quality of life through sustainable health, nutrition, and population development.

2 DemProj projects a population by age and sex and is based on assumptions about fertility, mortality, and migration. RAPID projects the social and economic consequences of high fertility and rapid population growth for sectors such as education, labor, health, urbanisation, and agriculture. Both models are part of the Spectrum Policy Modeling System, available at: <http://www.healthpolicyproject.com/index.cfm?id=software&get=Spectrum>.

Figure 1. Population Scenario of Uttar Pradesh



Source: Census of India 2011 and projections using DemProj.

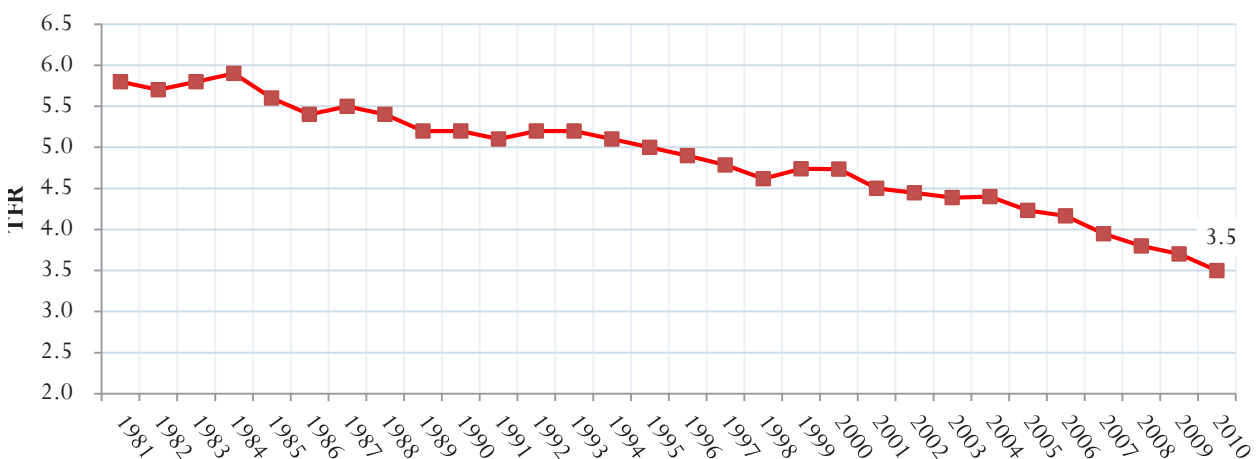
III. Progress in Achieving the Population Policy Goals

The UP Population Policy aims to improve the quality of life of the state’s inhabitants through population stabilisation. The major goals focus on reaching replacement-level fertility (2.1 children per woman) by 2016 and improving maternal and child health:

- **Later age at marriage.** Increase the median age at marriage for women from 16.4 years in the late 1990s to 19.5 years by 2016.
- **Smaller family size.** Reduce the total fertility rate (TFR) from 4.3 children per woman in 1997 to 2.6 children in 2011 and 2.1 children in 2016.
- **Fewer maternal deaths.** Reduce the maternal mortality ratio (MMR) from 707 pregnancy-related deaths per 100,000 births in 1997 to 394 in 2010 and to below 250 in 2016.
- **Fewer infant deaths.** Reduce the infant mortality rate (IMR) from 85 deaths among infants under one year of age per 1,000 births in 1997 to 73 in 2006, 67 in 2011, and 61 in 2016.

UP has made progress towards its maternal and child health goals. However, the state has made limited progress in addressing the unmet need for family planning. The data indicate the following:

Figure 2. Trends in TFR in Uttar Pradesh



Source: SRS 1981–2010

- **Stagnating fertility decline.** Figure 2 shows that UP's TFR—the average number of lifetime births per woman by the time she reaches age 50—dropped significantly in the early 1990s but that the pace of the decline has levelled off since then. The TFR is currently 3.5 children per woman—far higher than the Population Policy goal of 2.1 children per woman by 2016. According to RGI (2006), UP is likely to achieve replacement-level fertility (i.e., 2.1) by 2027, and with this trend, the state will cross the 31 crore (310 million) mark by 2051 (DemProj projection 2006).
- **Significant progress towards achieving infant and child mortality goals.** The death rates of infants and children under the age of five in UP have declined substantially in the past decade. The current IMR—the number of infant deaths per 1,000 live births—is 61 (SRS 2010). The under-five mortality rate in UP in 2010 was 79, amongst the highest in the country (SRS 2010).
- **Considerable improvements in maternal mortality.** UP's MMR—the number of deaths to women due to pregnancy and childbirth per 100,000 live births—was 517 in 2003. This has come down to 359 in 2009 (SRS), however it continues to be the highest amongst all the states. While important declines in maternal mortality occurred during 1997–2003, the pace of progress will need to be escalated in order to reach the goal of reducing maternal deaths to below 250 per 100,000 births by 2016.
- **Low use of contraceptives.** The contraceptive prevalence rate (CPR) is the proportion of women of reproductive age who are using (or whose partner is using) a contraceptive method at a given point in time. CPR in UP is 29.3 per cent

for any modern method (NFHS-3, 2005–06). The UP Population Policy goal is to achieve 52 per cent CPR (modern methods) by 2016. The state would need to increase the CPR by almost 23 per cent by 2016 to achieve the goal.

- **High unmet need for family planning.** Unmet need is defined as the proportion of women who want to delay or limit childbearing but are not using any FP method (traditional or modern). Based on the NFHS-3 data, one in five (21%) currently married women in UP had an unmet need for family planning in 2005–06; 12 per cent of women surveyed did not want any more children; and an additional nine per cent wanted to delay their next birth by at least two years but were not using family planning.

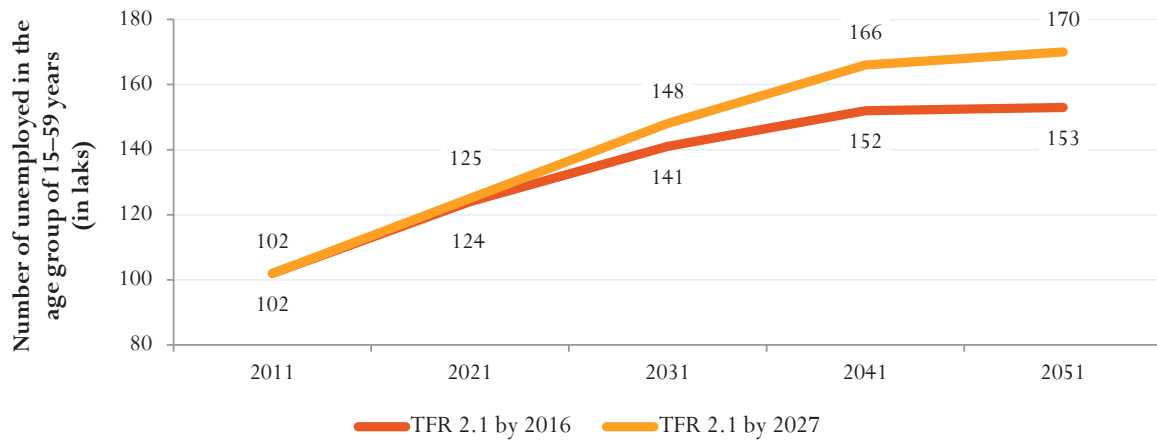
IV. Drivers of the Increase in Population

Early marriage. Early marriage increases the length of time for which a girl is exposed to pregnancy, which in the absence of use of an FP method can lead to higher levels of fertility affecting the overall population momentum. This is a key issue affecting the state; recent Annual Health Survey (2010–11) data show that 39.5 per cent of currently married women (20–24 years old) are married before the legal age of 18. Overall, this impacts their education, health, and well-being.

Early childbirth. Early marriage is potentially linked to early childbirth, as it keeps the fertility levels high. Early childbearing can put women at increased risk of complications during pregnancy and delivery. The recent survey indicates that among women ages 15–49, half had their first live birth by 21.9 years old (AHS 2010–11).

In India, infant mortality is higher among mothers who are younger (under age 20), are older (over age 39), have many births (more than three children), and space their births less than two years apart. Delaying child and teenage marriages, promoting healthy timing and spacing of births, and encouraging fewer births per woman reduces maternal, infant, and child deaths by eliminating the potential for high-risk births.

Figure 3. Projection of food grain production (lakhs tonnes) in case of high and low fertility scenarios



V. Effect of Population Growth on Social and Economic Development and People’s Welfare

UP’s population is large and growing. With the current rate of growth, the population of UP will be 31 crores (310 million) by 2051. How does the rapidly growing population affect UP’s economic growth and commitment to improving the living standard of its citizens? The section below provides projections of the impact of increased population on food security, education, health, employment, and infrastructure needs of the state.

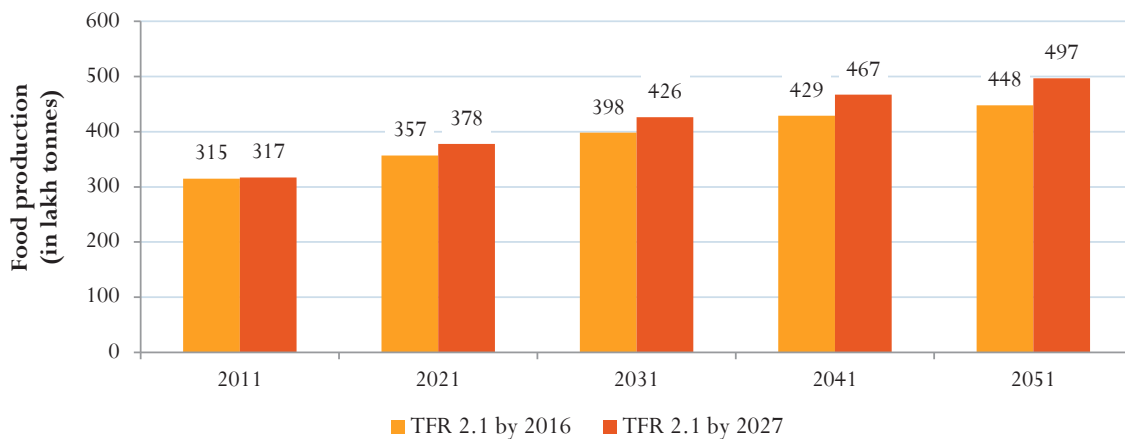
The following analyses examine the consequences of population growth related to meeting education, health, and economic

goals. Two scenarios are considered: (1) a low-fertility scenario in which the TFR is achieved by 2016 per UP Population Policy goals and (2) a high-fertility scenario in which replacement-level fertility is reached by 2027 as estimated by the RGI Population Projection, 2006. Below are several highlights from the analysis, examining the interrelationships.

If UP achieves a 2.1 TFR by 2016, the state would require 4.6 lakh primary teachers by 2051 instead of 5.7 lakh primary teachers if the TFR of 2.1 is not achieved until 2027.

Increased spending on education with higher population. A rapidly growing student population in UP will require additional resources to build schools and train, recruit, and retain more teachers. The Right to Education act (RTE) mandates an optimal student-teacher ratio of 30:1 for

Figure 4. Projection of number of unemployed (in lakhs) in case of high and low fertility scenarios



all Indian schools. Currently, the student-teacher ratio in UP is 52:1, according to the District Information Systems for Education. With lower fertility, fewer primary teachers will be needed—4.6 lakhs v/s 5.7 lakhs by 2051.

Food security. Food security remains a fundamental development objective. Nationally, the per capita food grain availability in 2010 (per annum) was 160 kg against the ideal of 400 kg. If population growth continues according to the high-fertility scenario, the demand for food will rise, and UP will have to provide for 31 crore (310 million) people by 2051 and will have to increase the food grain production by 58 per cent from the current level (315 lakh tonnes) (see Figure 3).

Health. The World Health Organization (WHO) recommends a 1:1000 doctor population ratio. As per the Medical Council of India (MCI) Records, the doctor population ratio in India is 1:1,700 (MCI, 2011). In comparison, the ratio in UP is 1:3,789, and a higher fertility rate in the state will put immense pressure on the system for a substantially higher number of doctors. It is estimated that to achieve Kerala's current ratio (i.e., 1:953) by 2051, UP would require an additional 3.6 lakh doctors.

Employment. Currently, more than 8 per cent of India's population is unemployed; both unskilled and skilled/educated workers are unable to find jobs. Lack of employment opportunities has fueled migration into cities. In UP, 8.6 per cent of the population between 15–59 years old is unemployed (Employment and Unemployment Survey, Ministry of Labour and Employment, 2009–10). With unchecked population growth, the number of youth entering the job market will be higher. It is estimated that an additional 302 lakh jobs will be required in UP by 2051 (see Figure 4).

Water and electricity. Water and electricity are interdependent. Electricity is required to make use of water; and water is needed to make use of electricity. In India, the demand for water and electricity is increasing at an alarming rate but shortages are rampant. According to the Census of India, 2011, 12

per cent of households do not have access to safe drinking water (i.e., tube well, tap, or hand pump water). About 40 lakh households do not get safe drinking water as of today. In UP, 63.2 per cent of households do not have an electricity supply.

If UP is unable to meet its population goals, the issues around the provision of safe water and electricity will get compounded. It is estimated that UP will need to provide electricity to an additional 12 crore (120 million) households by 2051 and safe drinking water to 1.5 crore (15 million) (cumulative) households.

VI. Family Planning: A Strategy for Uttar Pradesh's Health and Development

One in five (21%) married women have an unmet need for family planning, which is defined as the proportion of women who want to delay or limit childbearing but are not using any FP method (traditional or modern). Investing in family planning will help improve health and development in UP.

- **Help couples in UP achieve desired family size.** Although the current TFR is 3.5 children per woman, UP couples want to have smaller families—on average about 2.3 children (based on data from the NFHS-3 2005–06). The Population Policy aims to help couples achieve their desired family size, which is close to the replacement fertility goal of 2.1.
- **Reduce childbearing risks.** High-risk births are major causes of illness, disability, and premature death among mothers and children (Feranil and Borda, 2008). High-risk births are defined as those that are spaced less than two years apart or born to mothers who are younger than 18 or older than 34 or who have more than three children (NFHS-3 2005–06). Analysis of the NFHS-3 data indicates that about half (51%) of births in UP fall under one or

more higher risk pregnancy categories due to the mother's age, repeated childbearing, and/or short birth intervals:

- Too early (when the mother is younger than 18 years old): 12 per cent
- Too late (when the mother is older than 34 years old): 25 per cent
- Too often (when the mother has had three or more births): 40 per cent
- Too soon (when a birth occurs less than two years after a previous birth): 24 per cent
- **Save lives:** Experts estimate that the widespread use of family planning could lower MMR by 20 per cent and IMR by as much as 25–30 per cent in developing countries. Spacing pregnancies farther apart can help women affected by anaemia and malnutrition to become healthier and better prepared for pregnancy in the future and thus to have healthier babies. For women for whom pregnancy poses substantial health risks and for those who do not want any more children, voluntary sterilisation can be an option to prevent pregnancy permanently. In summary, meeting the unmet need for family planning reduces fertility rates, leading to improvements in women's and children's health. These improvements could be observed within a decade if unmet need was eliminated by 2016.

VII. Policy Actions and Strategic Directions for Discussion

Achieving the Population Policy goals will foster significant potential for families in UP to achieve their socio-economic aspirations and for the state to make progress toward achieving its development objectives. The outlook for socio-economic development would be much brighter—fewer children requiring primary schooling, fewer teachers and health providers needed, and lower public sector expenditures just to maintain current

levels of education and health services. The potential savings could be tapped to improve the quality of health and education services.

UP is at an exciting juncture with a young and motivated leadership; high donor involvement and interest; innovations in family planning; financial resources placed under the National Rural Health Mission (Rs. 2670 crore committed by the Centre for 2012–2013); established health infrastructure; and a large number of private providers in urban and peri-urban areas to leverage and train effective health planners. It is an opportune time to make investments in family planning. Some effective strategies to be discussed in the context of UP include

- Increased funding, focus on, and monitoring of family planning—establishing a monitoring system under the direct chairmanship of the Chief Minister
- Increased involvement of private sector service providers and social marketing organisations to increase access to a wide choice of contraceptives
- Increased access to FP products and services through public–private partnership initiatives like mobile health vans, vouchers, social marketing, etc.
- Promotion of delaying and spacing methods like oral contraceptive pills, intrauterine devices, injectable contraceptives, condoms, and cycle beads
- Increased community engagement to address socio-cultural issues of age of marriage and first child
- Monitoring the FP status through district vigilance and monitoring committees

The time to act is NOW. The benefits of family planning accrued over a period of time will affect the cumulative gains made by the state in the long run—in turn contributing to the growth of the nation.

References and Resources

Feranil, I., and M. Borda. 2008. *Achieving Uttar Pradesh's Population Policy Goals through Demand-based Family Planning Programs: Taking Stock at the Mid-point*. Washington, DC: USAID | Health Policy Initiative, Task Order 1, Futures Group.

Government of Uttar Pradesh. 2000. *Uttar Pradesh Population Policy*. Lucknow: Government of Uttar Pradesh.

International Institute for Population Sciences (IIPS) and ORC Macro. 2000. *National Family Health Survey (NFHS-2)*, 1998–99. Mumbai: IIPS.

IIPS and Macro International. 2007. *National Family Health Survey (NFHS-3), 2005–2006: India: Volume I*. Mumbai: IIPS.

IIPS and Macro International. 2008. *National Family Health Survey (NFHS-3), India, 2005-06: Uttar Pradesh*. Mumbai: IIPS.

Medical Council of India (MCI). 2011. *Vision 2015*. Accessed on http://www.mciindia.org/tools/announcement/MCI_booklet.pdf on July 2, 2012.

Ministry of Information and Broadcasting, Government of India. 2012. "Agricultural Statistics At a Glance 2011."

Ministry of Agriculture, Government of India. Accessed on http://eands.dacnet.nic.in/latest_2006.htm on July 2, 2012.

Ministry of Labour and Employment, Government of India. *Report on Employment and Unemployment. 2009-10*. Accessed on http://labourbureau.nic.in/Final_Report_Emp_Unemp_2009_10.pdf on July 2, 2012.

Office of Registrar General and Census Commissioner, India. *Annual Health Survey 2010-2011. Fact sheet of Uttar Pradesh*. New Delhi: Office of Registrar General and Census Commissioner.

Office of the Registrar General and Census Commissioner, India. 2011. *Census of India. Provisional Population Totals: India*. New Delhi: Office of Registrar General and Census Commissioner.

Office of the Registrar General and Census Commissioner, India. Various editions. *Sample Registration System*. Various Editions. New Delhi: Office of Registrar General and Census Commissioner.

Technical Group on Population Projection. 2006. *Population Projections for India and States 2001-2026*. New Delhi: Office of the Registrar General and Census Commissioner.

The POLICY Unit is an apex body leading health policy research and analysis guiding the Ministry of Health and Family Welfare, health-based civil society organisations, advocacy networks and coalitions, academic institutions and other stakeholders to establish and improve health policies and strategies.

The Health Policy Project is a five-year cooperative agreement funded by the U.S. Agency for International Development under Agreement No. AID-OAA-A-10-00067, beginning September 30, 2010. It is implemented by Futures Group, in collaboration with CEDPA (CEDPA is now a part of Plan International USA), Futures Institute, Partners in Population and Development, Africa Regional Office (PPD ARO), Population Reference Bureau (PRB), RTI International, and the White Ribbon Alliance for Safe Motherhood (WRA).

The information provided in this document is not official U.S. Government information and does not necessarily represent the views or positions of the U.S. Agency for International Development.