The 2010 – 2035 Indonesian Population Projection

Understanding the Causes, Consequences and Policy Options for Population and Development

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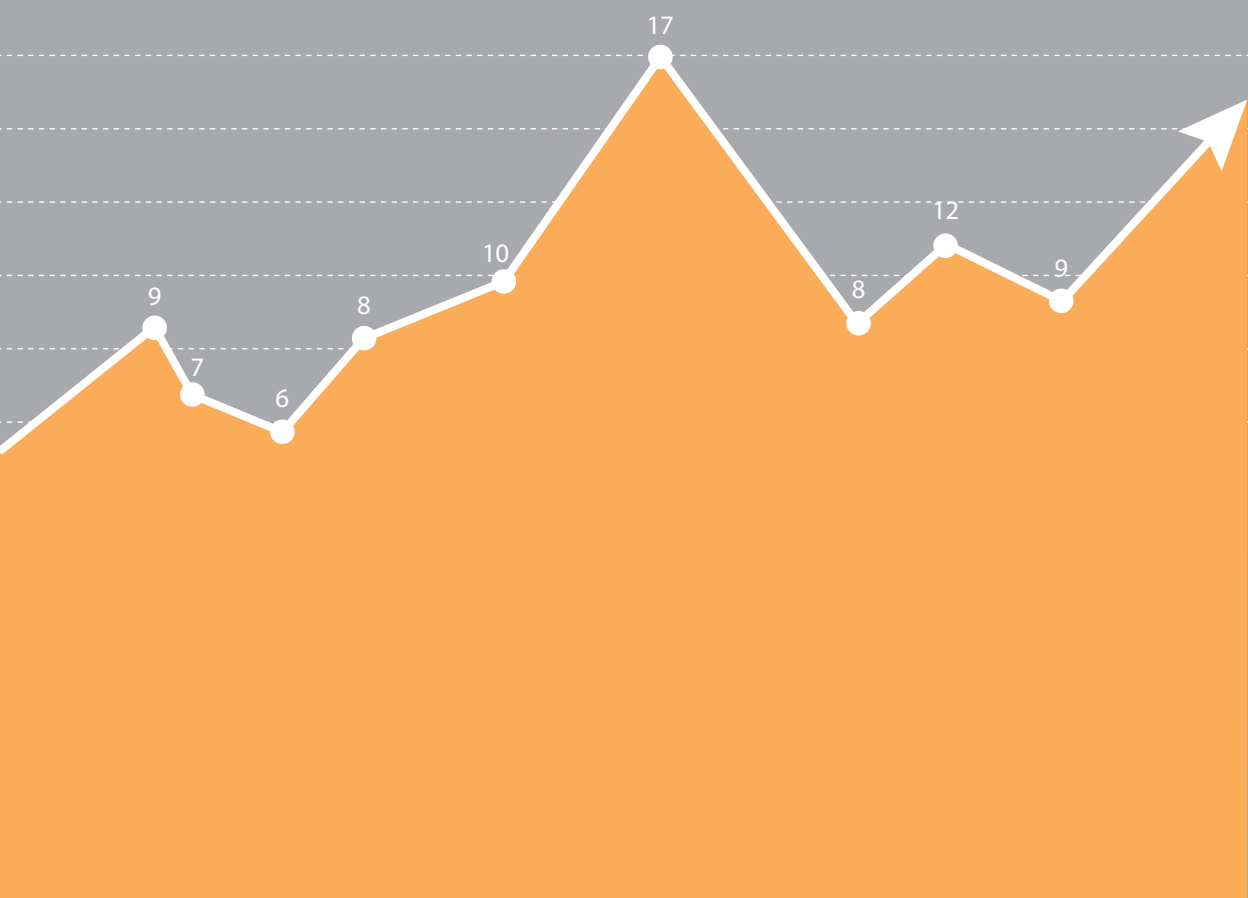

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Introduction

The Indonesian government requires a set of population projections for planning purposes, and a new official set of projections is prepared after each population census has been completed. The latest set of projections were completed and presented to the public on 29 January 2014, at an occasion presided over by the President. These projections are for the population of Indonesia as a whole, as well as for each of its 33 provinces. They were prepared by a team comprising representatives from relevant government agencies and university experts, reporting to Ministry of National Development Planning/ National Development Planning Agency (Kementerian PPN/Bappenas) and BPS-Statistics Indonesia. Preparation of the projections was supported by the United Nations Population Fund (UNFPA).

Background to the Projections

Since the beginning of the 21st Century, Indonesia's population has grown more than had been expected. This is because of a stalling of the fertility decline, which had proceeded steadily over the 1970s, 1980s and 1990s. Use of different sources of data gives somewhat different pictures of the trends in fertility, but what is clear is that the fertility decline experienced during the 1990s has not continued in the present century; fertility in 2012 was barely different from its level in 2002 (Hull, forthcoming), and remained above replacement level (i.e. the level which, if continued into the future, will eventually lead to the population size remaining constant). New projections based on such evidence of course show both a different base population for 2010 and different trends in future than earlier projections.

Summary of methodology

A national population projection requires an adjusted base population, estimates of base year fertility and mortality rates, and estimates of international and internal migration. In the case of international migration, because of great uncertainty about numbers and trends, the assumption

was that net migration would be zero. The remaining need, then, was for assumptions about the other three variables, for each province. In the case of fertility, the past trend was taken into account, and TFR assumed to reach replacement level in 2025 using a logistic function. For individual provinces, past trends for each province were taken into account, and a logistic function used to project future fertility. In the case of mortality, the infant mortality rate was projected based on past trends and government policy, using a logistic function. Similar procedures were used for the projections for individual provinces. The Appendix provides a table showing the assumed fertility and mortality rates by province in 2010-15 and projected to 2030-35.

In the case of internal migration, projections were based on the pattern of internal migration by age and sex over the previous 5 years, as calculated from the 2010 Population Census.

Projections of the urban and rural population were also included, using the Urban Rural Growth Difference method. For provinces where the urban rural growth difference has been high (more than 30 per cent), the difference is assumed to gradually narrow; where the difference has been moderate, the difference is also assumed to narrow, only more slowly; where the difference has been low (less than 20 per cent), it is assumed to increase slowly.

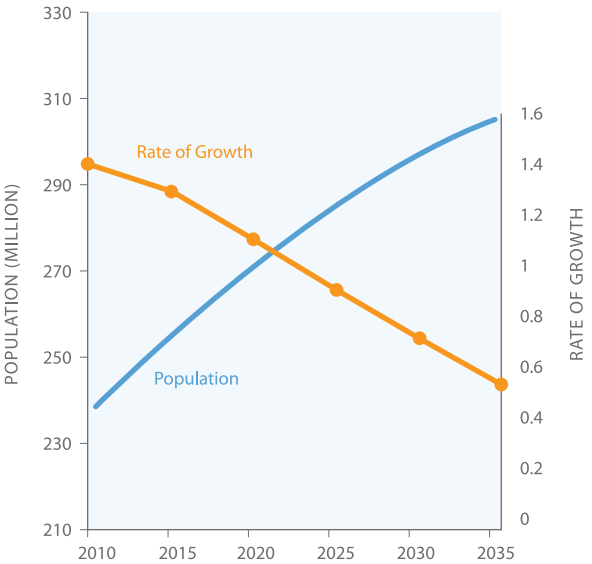
Using these approaches, projections were prepared for Indonesia as a whole, and for each individual province. The provincial projections were then adjusted mathematically, to constrain their totals to sum to the totals for Indonesia. Information is not provided about the extent of adjustment that was required to the initial provincial projections.

Growth of population

Over the next 25 years, Indonesia can expect to experience very substantial population growth – an increase of 67 million, or 28 per cent (see Figure 1). The rate of growth will be gradually slowing – from 1.38% per annum in the 2010-2015 period to 0.62% per annum in the 2030-2035 period. Where will the increase be taking place? Much of it - 30 million - will take place in the densely populated island of Java, raising the overall population density in Java from 1,068 per sq. km. in 2010 to 1,304 per sq. km. in 2035 – one of the highest densities in the world, just surpassed by Bangladesh, which had a population density of 1,174 per sq. km. in 2011. The high density is not evenly spread over the whole island. There are sparsely settled areas, particularly on the upper slopes of Java's numerous volcanoes and in some southern coastal areas, and very densely settled areas in the big cities and in the more favoured agricultural areas. In the entire Jabodetabek mega-urban region, which covers 6,400 sq. km., the population density is 6,400 per sq. km. Overall, 59 per cent of Java's population already lives in urban areas, and this is expected to reach 78 per cent in 2035.

Figure 1.

Projection of Indonesia's Population, 2010-2035



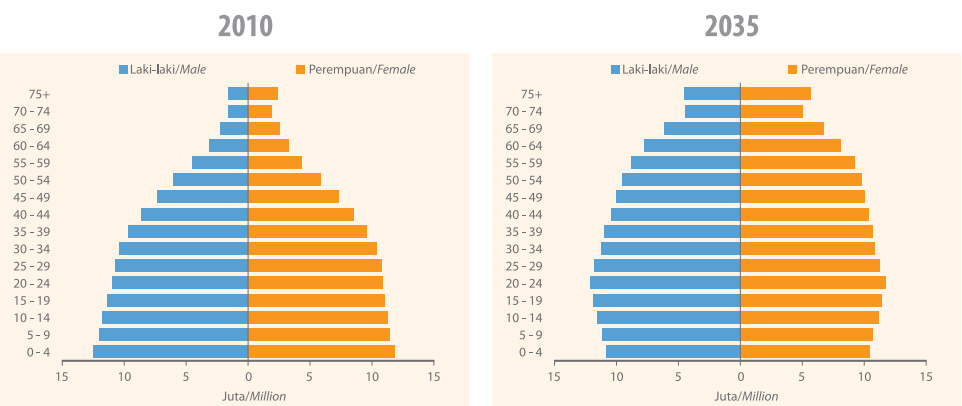
Despite its projected continuing growth, Java's share of Indonesia's population will continue its long-term slow decline – from 57 per cent to 55 per cent over the 25-year projection period. This is partly because of lower fertility, on average, in Java than elsewhere in Indonesia, and partly because of Migration.

Indonesia's changing age structure

While Indonesia's overall rate of population growth will be steadily declining, the growth of different age groups within the population will vary considerably. As shown in Figure 2, the population pyramid in 2010 was already somewhat cylindrical up to around age 35, as a result of steady declines in fertility in

Figure 2.

Indonesian age pyramids, 2010 and 2035



the 1970s, 1980s and 1990s. By the year 2035, the cylindrical shape will have advanced up to ages in the early 50s, and there will be a slight undercutting at ages below 20, which was not in evidence in the 2010 pyramid. The section of the pyramid which will broaden noticeably over the period is that of the population aged in the late 40s and above.

Figure 3 shows that the number of children will increase slightly over the next 10 years and then start to decline. The number of women in the main reproductive ages – 15 to 34 years old – will also continue to increase slowly throughout the projection period (though only by 9 per cent; not shown in Figure 3), meaning that the annual number of births will also increase unless fertility rates decline. Since fertility rates are indeed projected to decline gradually, the number of births is expected to remain roughly constant and then begin to decline slightly over the decade beginning in 2010.

The younger segment of the working-age population – those aged 15-29 – will continue to increase slowly. However, the working-age population of more mature age – those aged 30-64 - will increase rapidly, as a result of higher fertility rates at the time when they were born. The fastest growth of all will be in the elderly population – those aged 65+, whose numbers are expected to increase by 20.5 million, or 173 per cent, over the 25-year projection period.

Figure 3.

Projection of age groups: 0-14, 15-64, 65+ : index of growth (2010=100)