

Crowded House: Analyzing Overpopulation and Poverty in Bangladesh and Indonesia

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Abstract

This article analyzes some main factors related to extreme poverty and overpopulation in both Bangladesh and Indonesia, and discusses possible solutions to these current issues. The primary focus of this article is to discuss the impact of environmental issues, lack of resources and poor family planning on overpopulation and its consequential result of poverty. The article aims to provide an insightful analysis of the factors in these two countries that contribute to overpopulation and poverty and to examine some possible interventions to stabilize the rates of population growth and to reduce endemic poverty in these nations.

I. Introduction

While a high population density can have certain benefits, in most developing countries the negatives typically outweigh the positives. Overpopulation and poverty are two major problems in both Bangladesh and Indonesia.

- As of 2013, Indonesia had an estimated population of 250 million, living on 1,904,569 square kilometers (km², or 735,358 square miles), which implies a population density of 138 persons per km². Excluding city states like Luxembourg or Singapore, Indonesia has the 24th highest population density in the world. About 11.4 percent of Indonesia's population (around 28 million people) live in poverty. Due to this poverty, about 112,000 infants die yearly, and about 8,800 maternal deaths occur yearly.¹
- Another country that experiences severe overpopulation is Bangladesh. Bangladesh has an estimated total population of 160 million in 2013, living on 147,570 km² (56,977 square miles), which implies a population density of 1.203 persons per km². Bangladesh has the

¹ All the data in this bullet point has been derived from World Bank (2015).

highest population density in the world after excluding city states. About 105,000 infants die yearly, and about 5,200 maternal deaths occur yearly.²

This article discusses and explains some of the main causes that produce the symptoms of poverty and the reasons for overpopulation, in addition to what it can lead to. Following this introduction is a brief literature review. An Empirical Background section, which will provide some basic socio-economic information on both Bangladesh and Indonesia, is provided in the third section, followed by the main discussion, which will examine some key issues related to poverty and overpopulation in these countries. Finally, the conclusion will provide insights and possible solutions to remedy the situation at hand.

II. Literature Review

There are many resources regarding overpopulation and poverty issues in Bangladesh and Indonesia. The following summaries are from mostly academic sources focusing on the key issues discussed in this article.

- Worker (1996) begins by discussing important facts and data about Bangladesh. It mentions its total population and more specifically, the per-capita population and other per-capita values in rural areas, such as the indigenous coastal fishing villages of Dhangmari. Worker continues to the number of people living in overpopulated areas, and people who were severely impacted by environmental factors, such as the typhoon of 1991. What makes this article extremely useful for this topic is its mention of specific agricultural hardships faced in areas like Dhangmari, which results in poverty in these parts of the country. Worker cites examples and incorporates people's personal stories.
- Henley (2011) begins by discussing the controversial phenomenon that fertility rates in Indonesia are high. He then continues to argue how economic conditions and the demand for labor were the most important factors affecting fertility. Later on, Henley explains that in areas that are not very densely-populated, birth rates increased as the growth of commerce "raised levels of prosperity, facilitated marriage, and undermined institutions such as debt-slavery which had previously acted to restrict marital fertility." He additionally explains that in highly population-dense areas, fertility rose "in response to demands for women's (and possibly child) labor."
- Nobles, Frankenberg and Thomas (2015) link mortality to fertility in Indonesia. The authors claim that as a result of the 2004 Indian Ocean tsunami that hit Indonesia the hardest, the more children who were killed and lost during and in the aftermath of the tsunami, the more children that were born. Couples were more likely to bear more children if they had lost one or more child to the disaster. This article also proves this trend on a larger, country-wide scale.
- Goni and Rahman (2012) discuss the impact of education of females on contraceptive use. The use of contraceptives is important in decreasing overpopulation by avoiding the birth of unwanted/uncared for children. The authors' main argument is that the more women who use contraceptives, especially in countries such as Bangladesh, are less likely to bear "invisible" or "excluded" children. The article proves this argument to be true, along with

² All the data in this bullet point has been derived from World Bank (2015).

the assertion that education is important in helping young women in developing countries to make better life-long choices in regards to having children.

- Schuler et al. (2006) discuss the problem of early marriage and childbearing in three villages of Bangladesh. They explore several interventions that have been practices in these three villages to promote later marriage and later ages to have children.
- Van der Eng (2010) discusses the sources of long-term economic growth in Indonesia over approximately the last two centuries. He presents estimates of gross domestic product (GDP), capital stock, education, and employment during key growth periods in Indonesia.

III. Empirical Background

III.1. Historical Background

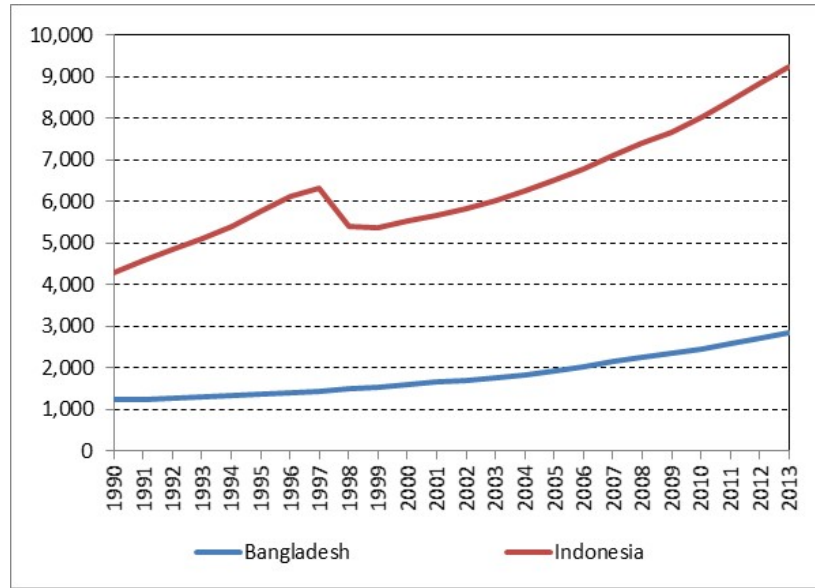
Bangladesh, officially called The People's Republic of Bangladesh, is located in South Asia and is bordered by Myanmar (formerly Burma) to its southeast, and by India to its west, north and east. Its capital is Dhaka, with a city-wide population of around 16.4 million, containing about 31 percent of the urban population (World Bank, 2015). Before the partition of India, Bangladesh was colonized by the British, until after the partition of India, India and Pakistan emerged as independent countries in 1947. Bangladesh became independent from Pakistan in 1971, so it is a relatively new country. The environment in Bangladesh mainly has a tropical climate with a mild winter (October-March), a hot summer (March-June), and a humid monsoon season. These long-term rainy seasons, however, have made Bangladesh prone to severe flooding for extended periods of time, which has impacted the economy over time (Worker, 1996).

Indonesia, officially called Republic of Indonesia, is located in Southeast Asia. It is an archipelago, consisting of thousands of islands. The country shares its land borders with Papua New Guinea, East Timor, and Malaysia. The capital is Jakarta, with an estimated population of 10 million people, containing almost 8 percent of the total urban population (World Bank, 2015). Indonesia used to be under Dutch rule before the Second World War. Indonesia became independent when Japan surrendered in August of 1945 and nationalist leader, Sukarno, declared the country independent and became its president. Much of Indonesia's economic success has come from its natural resources, such as natural gas and oil. According to the National Resource Governance Issue, "Indonesia supplies 20 percent of the world's tin and has a considerable copper, nickel, gold, and coal resources. Petroleum and minerals together made up 42 percent of exports in 2011. According to the Natural Resource Governance Institute (NRGI) (2013), the petroleum sector accounted for 18 percent of government revenues in 2011.

III.2. Evolution of Income Per Capita

As shown in Figure 1, purchasing power parity (PPP)-adjusted GDP per capita in Bangladesh is significantly lower than that of Indonesia, but nevertheless more than doubled from 1990 to 2013. Indonesia's GDP per capita also more than doubled over the same period, despite experiencing a sudden drop around 1997 due to the 1997 Asian Financial Crisis.

Figure 1: PPP-adjusted GDP per capita (constant 2011 international dollars)

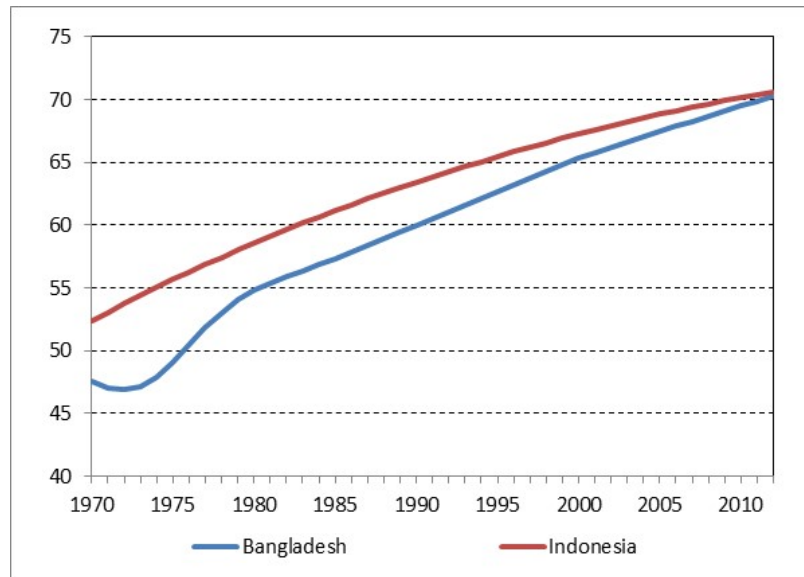


Source: Created by author based on World Bank (2015).

III.3. Evolution of Life Expectancy

As shown in Figure 2, both Bangladesh and Indonesia drastically increased their life expectancy at birth. In Bangladesh, excluding the minor decrease between 1970 and 1972 (which is related to its violent independence war), life expectancy increased steadily from 47.6 years in 1970 to 70.3 years in 2012. In Indonesia, life expectancy increased steadily from 52.4 years in 1970 to 70.6 years in 2012.

Figure 2: Life Expectancy at Birth in Bangladesh and Indonesia, 1970-2012

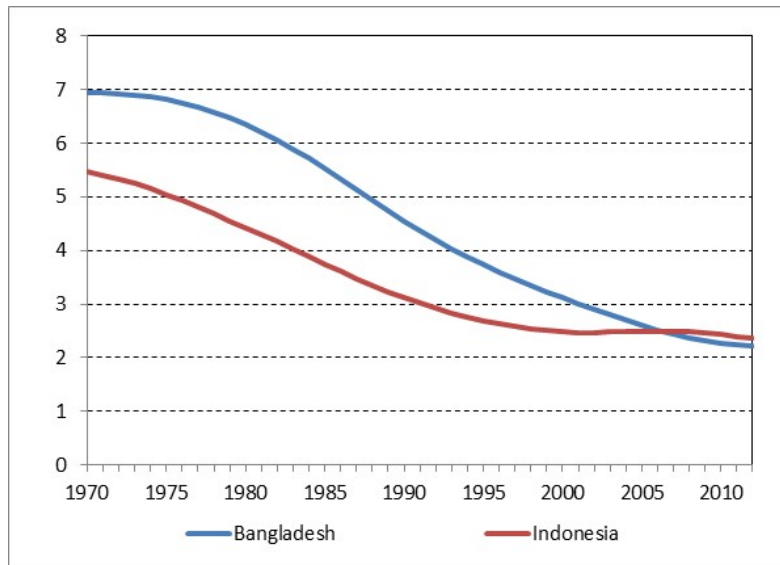


Source: Created by author based on World Bank (2015).

III.4. Evolution of Fertility

The last empirical fact we want to look in this section is the evolution of fertility. Figure 3 depicts the fertility rates (births per women) in Bangladesh and Indonesia from 1970 to 2012.

Figure 3: Total Fertility Rate (births per woman)



Source: Created by author based on World Bank (2015).

Nobles, Frankenberg, and Thomas (2015) show the effects of natural disaster on fertility, discussing the population dynamics of Indonesia after the Indian Ocean Tsunami of 2004. As a whole, it was observed that sustained fertility increased at the aggregate level following the tsunami. There were two behavioral responses to mortality exposure: mothers who lost children wanted to conceive again, and mothers who did not have children prior to the incident wanted to begin starting a family sooner. According to the study, “mothers who lost one or more children in the disaster were significantly more likely to bear additional children after the tsunami. This response explains about 13 percent of the aggregate increase in fertility. Second, women without children before the tsunami initiated family-building earlier in communities where tsunami-related mortality rates were higher, indicating that the fertility of these women is an important route to rebuilding the population in the aftermath of a mortality shock.”³

IV. Discussion: Environmental Factors, Education and Health

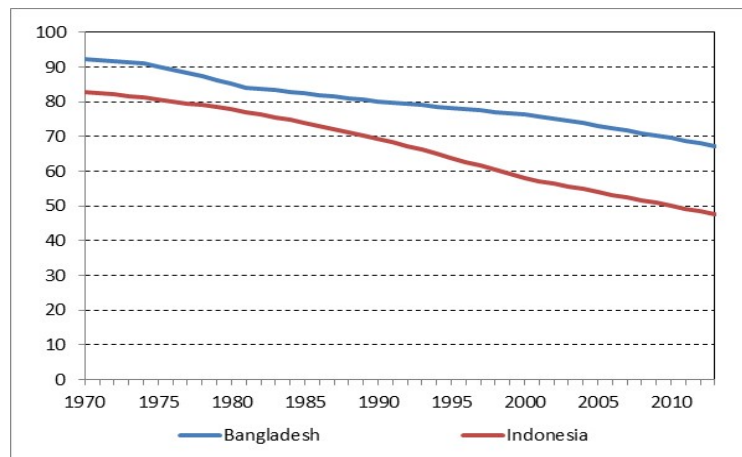
There are many factors that can be related to poverty and overpopulation. In this discussion section, we emphasize the influences of three areas for which observed data exists: (1) environmental factors, especially climate change and natural disasters, which both mostly affect agriculture, (2) education, and (3) health.

³ Nobles et al., 2015, p. 15.

IV.1. Environmental Factors: Climate Change and Natural Disaster

Despite a massive urbanization in Indonesia and more recently also in Bangladesh, which is illustrated in Figure 4, most of the poor people still in in rural areas in both Bangladesh and Indonesia. According to the World Bank (2015), the rural poverty headcount ratio at national poverty lines (percent of rural population) in Bangladesh and Indonesia in the year 2010 was at 35.16 percent, and 16.6 percent, respectively.

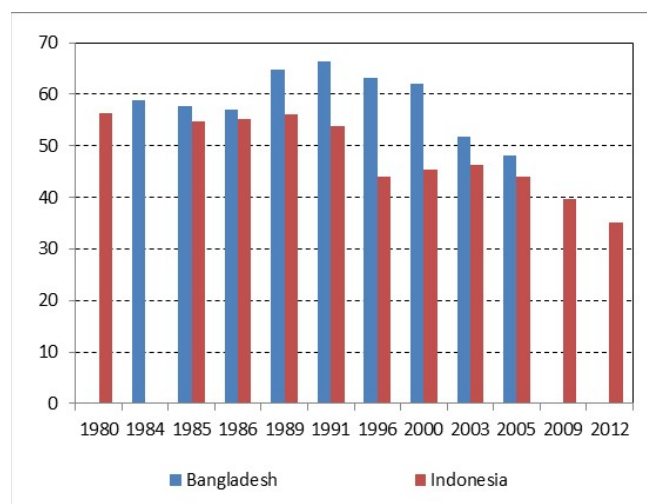
Figure 4: Share of Rural Population (% of total population), 1970-2013



Source: Created by author based on World Bank (2015).

Hence, the agricultural sector remains very important for economic prosperity and both countries can overall be considered to be agriculturally-based countries. As shown in Figure 5, employment in the agriculture stood at 48.1 percent of total employment in Bangladesh in 2005 (which is the latest such data available), while it stood at 35.1 percent in 2012 for Indonesia.

Figure 5: Employment in Agriculture (percent of total employment)



Source: Created by author based on World Bank (2015).

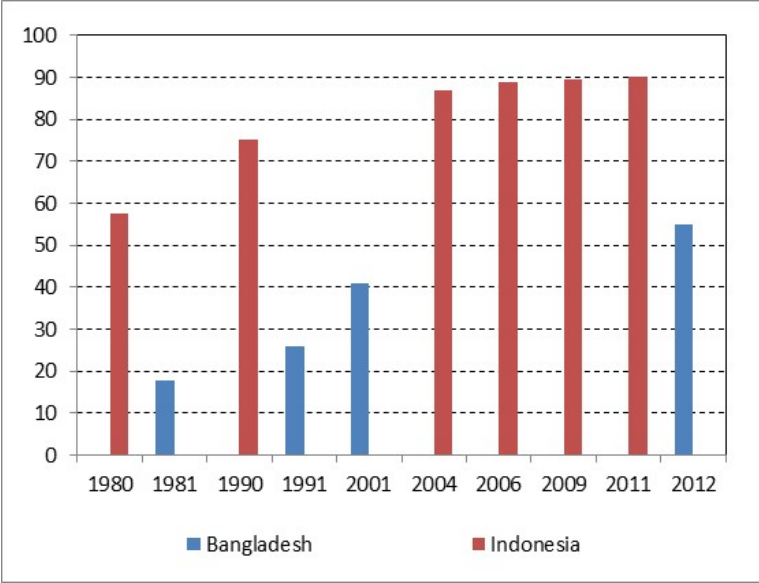
However, the rural poor’s income is heavily affected by climate change and natural disasters. In Bangladesh, the main crops exported are wheat, rice, and mango. Fish, seafood and jute are also large commodities when it comes to agricultural exports of Bangladesh. These are all able to be grown in bulk due to the mostly fertile soil in Bangladeshi farmland. Indonesia’s main crops are palm oil, poultry, beef, shrimp, cocoa, fish, and herbs/spices.⁴

Bangladesh experiences a monsoon season, which leads periodically to severe flooding, reducing agricultural production. Additionally, as Bangladesh is located at the Ganges Delta and Bay of Bengal, coastal flooding is not uncommon. Indonesia also gets monsoon-like weather during the summers, but the biggest damage to crops was caused by the Tsunami of 2004. Climate change and natural disasters do not only affect agricultural production, but create a chain reaction, impacting the economy and leading to both overpopulation and poverty.

IV.2. Education

While both Bangladesh and Indonesia have experienced a decline in fertility (see Figure 3 above), both countries are still suffering from high population density, which is due to high fertility rates in the past. The previously high fertility rates have been associated to the previous lack of access to education. In the early 1990s, rural female illiteracy was almost at 90 percent, which, according to Worker (1996) offers one explanation for the past failure of family planning programs. Fortunately, as is shown in Figure 6, adult female literacy rates have improved a lot in both Bangladesh and Indonesia, and as was already shown in Figure 3 above, fertility rates have decreased significantly.

Figure 6: Adult Female Literacy Rate (percent of females ages 15 and above)



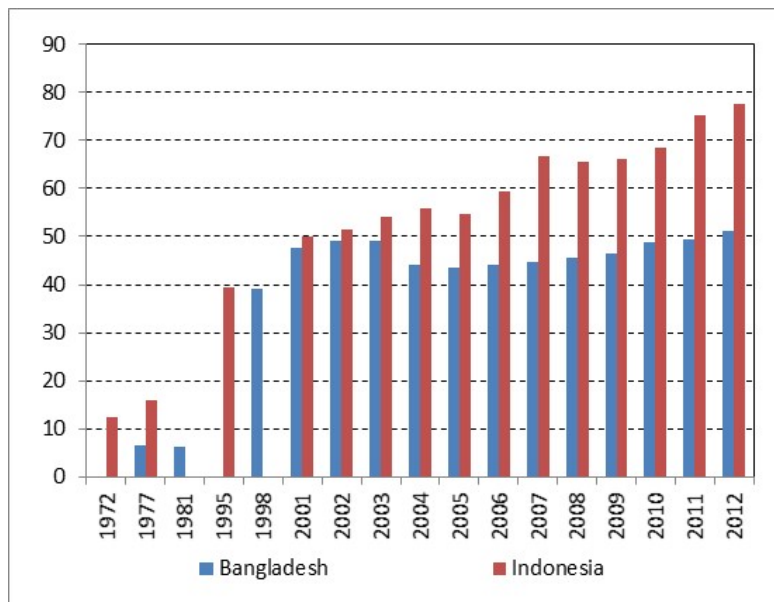
Source: Created by author based on World Bank (2015).

⁴ See CIA World Factbook available at: <https://www.cia.gov/library/publications/the-world-factbook/>.

A large contributing factor to the previously high fertility rates has been early marriage and early childbearing. According to a study performed by Schuler et al. (2006), some of the poorest of the poor in Bangladesh have to choose between competing risks of poor living conditions and economic lifestyle vs. education and motherhood for young females. Schuler et al. (2006, p. 2826) state that “marital strategies among the poorest are, above all, strategies for economic survival, and poor families tend to see the costs of education and delayed marriage for daughters as high and the outcomes as uncertain.” When one has to decide which factor of their lives to risk, it can be hard to make any decision, but when a child is born, there is no going back, so motherhood tends to be a common option for poor families in this situation.

As a result of bearing children so early, many females between 13 and 20 have not been able to attend secondary school. As Figure 7 shows, the percent of females attending secondary education has increased, but nearly half of the girls living in Bangladesh and nearly one quarter of the girls in Indonesia still do not have any access to secondary education.

Figure 7: Net Female Secondary Education (percent)



Source: Created by author based on World Bank (2015).

It is important to remember that the government has a major influence on the youth’s access to proper education. Quality of education improves when more money is invested in the education of students, and that can only happen when there is money provided. According to the World Bank (2015), the government in Bangladesh spends about 14.1 percent of its expenditure on education, while the government of Indonesia spends about 18.1 percent of their expenditures on education.

IV.3. Health

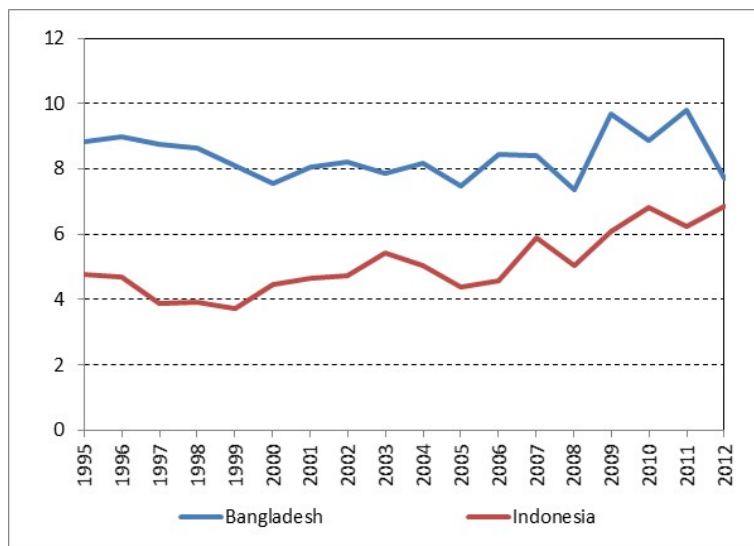
Finally, the third major factor related to poverty and overpopulation is poor health. Wherever there is overpopulation, there is also a high susceptibility to disease through close contact. Both of the natural disasters in each country not only led to deaths in the areas, but also long-term exposure to

illnesses. For example, in Bangladesh, the 1991 typhoon killed not only 125,000 people in one day,⁵ but also led to wide-spread instances of cholera, dengue fever, and malaria.

Bangladesh is, and has been, at a high risk for major infectious diseases because of food or waterborne diseases and contamination. The biggest food and waterborne diseases are bacterial and protozoal diarrhea, hepatitis A and E, and typhoid fever. Vectorborne diseases (which are diseases spread through mostly insects), include dengue fever and malaria. And the biggest risk from water contact disease is leptospirosis. In Indonesia, the major infectious diseases that are high-risk include bacterial diarrhea, hepatitis A, and typhoid fever for food or waterborne diseases. Just like in Bangladesh, vectorborne diseases in Indonesia are dengue fever and malaria.⁶

As stated in the CIA World Factbook’s Notes and Definitions,⁷ “the degree of risk is assessed by considering the foreign nature of these infectious diseases, their severity, and the probability of being affected by the diseases presence.” While these diseases are prevalent in both countries, the access to healthcare is not. Figure 8 shows the percent of total government expenditure on public healthcare and institutions between 1995 and 2012 in both Indonesia and Bangladesh.

Figure 8: Public Health Expenditure (percent of gov. expenditures), all available years



Source: Created by author based on World Bank (2015).

V. Conclusion

During the last decade, both Bangladesh’s and Indonesia’s GDP per capita has risen and poverty has been reduced significantly. However, poverty is still a major issue in both of these countries. The abundance of data shown above explains that there are several factors that induce poverty and affect economic growth and success of a country as a whole. It is clear that environmental factors and climate change have had a significant impact on both Bangladesh and Indonesia. It is also clear that there needs to be more funding for public education as well as healthcare by the

⁵ Worker (1996).

⁶ See CIA World Factbook available at: <https://www.cia.gov/library/publications/the-world-factbook/>.

⁷ See: <https://www.cia.gov/library/publications/the-world-factbook/>.

government. This can be done through various government-organized programs and international aid from other countries. While there are other factors that affect growth and poverty in Bangladesh and Indonesia, the issues of environmental change, access to education, and access to healthcare are significant.

Both Bangladesh and Indonesia can learn from each other by embracing aid from other countries and coming up with national policies and programs to help eliminate extreme poverty in these countries forever. It will take years and a lot of effort to make this happen, it can be done. If the government invests more time and money in protection of agricultural growth in the case of another natural disaster, the after effects won't be as harsh. Additionally, if the government invests more time and money in funding for education and healthcare, less people will be living in extreme conditions of poverty, and both countries will be able to turn themselves around in the long run.

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