

INTRODUCTION

The current growth numbers are historically very exceptional and untenable in the long term. The demographic growth rates are indeed on the increasing world wide and this paper attempt to explain some of the mechanisms behind that process that does not change the fact, however, the growth remains extraordinarily high and the decline in some regions are very slow. This is especially the case in sub-saharan Africa. In absolute numbers, the world population will continue to grow anyway for quite some time as a result of demographic inertia. This too will be further clarified in this paper.

EVOLUTION OF THE WORLD POPULATION IN NUMBERS

Thomas R. Malthus already explained in his famous "Essay on the principle of population (1789), he argues that, in time the growth of the population will inevitably slow down, either by an increase of death rate or by a decrease of the birth rate. On a local scale, migration also plays an important role.

It is no coincidence that Mathuas' essay appeared in England at the end of the 18th century. After all, the population there had started to grow at a historically unseen rate (Lam, 2011). More specifically the proletariats had grown immensely and that worried the intellectuals and the elite. Year after year, new demographic growth records were recorded.

" For most of human existence on the earth, humanity's numbers have been few. When people first started to cultivate food through agriculture. Some 12,000 years ago, the estimated world population was no more than 5 Millions" (Todaro and Smith, 2009: 285). 200 years ago, world growth had grown to nearly 250 millions, less than a fifth of the population of China today. Todaro and Smith (2009) assert that, From year 1 to the beginning of the industrial revolution around 1750, less than three quarters of the total number living in India today. During the next 200 years (1750-1950), an additional 1.7 billion people were added to the planet's numbers. But in just four decades thereafter (1950-1990), the earth's human population more than doubled again, bringing the total figure to around 5.3 billion. As a result, the world entered the twenty century with over 6 billion people.

According to Todaro and Smith, (2009: 286) they argue that "About 1.7 billion people lived in development countries, representing about two -third of the world". In that, by 2050 the population of less developed countries will reach over 8 billion, nearly the number of the world's population. In the corresponding world, the population of the least developed countries will increase by tenfold. From about 200 million to 2 billion people. In contrast, the population of the developed countries will grow very little between now and 2050, even accounting for immigration from developing countries.

Likewise, Lam, (2011) argues that, today, the world population growth rate remains at a historically high rate of nearly 1.2 percent per year, but the rate of increase is still slowing. However, the population growth rate in Africa is still an extremely high 2.3 percent per year.

Todaro and Smith, (2009: 292) argue that, "population explosion first occurred on a small scale and with a relatively moderate intensity in Europe and America, more or less between 1750 and 1950". In simple put, from 1950 on, a much more substantial and intensive population explosion started to take place in Asia, Latin America and Africa. Asia already represented over 55 percent of the world population in 1950 with its 1.4 billion live in China and 1.2 billion live in India which together accounting for more than one third of the world population.

Statistically, the proportion of Asia will come down and that of Africa will increase. Africa was populated by some 230 million people around 1950, or 9 percent of the world population. In 2010 there already more than 1 billion Africans or 15 percent of the world population. according to UN projecton, Africa will continue to grow at a spectacular rate up to 2.2 billion inhabitants in 2050 or 24 percentage of the world population. The proposition of Europe, on the other hand is evolving in the opposite direction. From 22 percentage of the world population in 1950, over 11 percentage in 2010 to an expected more 8 percentage in 2050. The population of the Latin America has grown and is growing rapidly in absolute terms, but because of the strong growth in Asia and especially Africa. The relative proportion of the Latin America population is hardly increasing at most from (6 to 8 percentage). The proportion of the population in North America finally has decreased slightly from 7 to the world population.

POPULATION GROWTH MODELS.

Different economists suggested fundamental models which empirically give tongue to the rationale of the high fertility rate in developing countries. The central argument based on the fact that, economic prosperities is direct proportional with population growth. The counterpart of the model argues that, no sooner the per capital income of the households increased than population growth marked to keep up breast with it. The models are detailed below.

The Malthusian population Trap. Bucc, (2003, p. 33) claim that " there is relationship between economic development and population growth". The central argument is that, population tend to grow exponentially while food supplies can at best grow in arithmetic progression. His theory found to be somehow relevant especially in developing countries where people become confident enough to give birth as they are relatively sure of having sufficient daily breads or rather surplus of income generation which is absolutely satisfiable in feeding the whole family members. Unfortunately, the

theory is merely based on a number of simplistic assumptions and hypothesis that do not stand the test of empirical verification. Todaro and Smith (2009), asserted that the model disregards the impact of technological progress in offsetting growth inhibiting forces of rapid population increases, since, technological progress is perhaps worked out by an upward shift of the income growth.

Moreover, it is argued that there is no clear correlation between population growth rates and levels of per capita income.(Todaro and Smith, 2009 p. 302). But it might be resulted from the development of medication and many other public health programs which lead to the rapid fall of death rates and make people less independent.

The micro Economic Households theory of fertility. The theory focus on the traditional neo-classic theory of households and consumer behaviour. Coal and Hover, (1958) asset that an individual with a set of preferences for a range of goods tries to maximize the satisfaction derived from consuming goods subject to his or her own income constant and relative prices of all goods. Therefore, children are considered as a special kind of consumption in low income countries. So fertility becomes a rational economic response to the consumer's (families) demand for children in conjunction to other goods.

THE CONSEQUENCES OF HIGH FERTILITY

Developmental economists and other social scientist have debated the seriousness of the consequences of rapid population growth. Todaro and Smith, (2009:307) argue that " Population growth is not the only primary source of low levels of living, eroding self esteem, and limited freedom in developing nations". But other issues such as underdevelopment, world source depletion. Likewise, it would be surprising to think that population growth in developing countries and regions is not serious intensifier and multiplier of those integral components of underdevelopment. The following discussion are some of the main arguments for and against the idea that the consequences of rapid population growth lead to serious development problem.

For many years, economists and social scientists have disputed the seriousness of the consequences of rapid population growth.Todaro and Smith, (2009:308) pinpointed three general lines of arguments on the part of people who asset that population growth is not a matter of grave concern.

- The problem is not population growth but other issues. Such as underdevelopment, world resource depletion and Environmental Destruction, population distribution and subordination of women. As long as greater parts of the people in the developing

countries remain poor, uneducated and physically weak, large family will constitute the only real source of social security. The higher fertility of the developing countries, is the result of over-consumption of the world scarce resources by the rich countries. This argument to some extent is not genuine as it claims on the issues which are caused by the population increase in its generalities.

- Population growth is a false issue deliberately created by dominant rich - country agencies and institutions. It is purposively done to keep developing in their dependent conditions. (Todaro and Smith, 2009:309). World wide birth control campaigns are seen as manifestations of the fears of the developed world in the face of a possible radical challenge. It is a scheme of the capitalist countries to keep developing countries in their reliance. This argument is closely related to the neo colonialism dependence model which is a tortuous outgrowth of Marxist thinking. It has been argued that over anxiety of the developed countries about the population growth of the poor countries is an effort to arrest the development of the developing countries in order to maintain their status quo that serves their self- interest. But the developed countries are pressurizing the poor countries to adopt aggressive population control programs to restrict their population growth that supports the second line of the pro-population growth argument.

- For many developing countries and regions. Population growth is in fact desirable. Todaro and Smith, (2009:310) argue that "population growth is essential ingredient to stimulate economic development ". That is to provide the need consumer demand to generate favourable economies of scale in production. According to this argument, through population result in additional demand for food, clothing, shelter, social services like education and Health. This argument which stated by Atzal (2009) carry some weight but it need to be weighed against the counter argument of those who believe that rapid population is real problems for LDCs (Less developed countries). Coale A. (1958), views that all of the world's economic and social problems result from excessive population growth. The advocates maintain that population control or even decline is the most urgent task of the LDCs even if it requires severe and coercive measures like compulsory sterilization in South Asian countries

Theoretical argument of population growth.

Economists argue on the premise that rapid population growth gives way to negative consequences and this should be real for developing countries because population growth retards prospects of a better life for the already born by reducing savings rate at the households and national levels. Positions supporting the need to

curtail population growth because of the negative economic, social and environmental consequences are typically based on one of the following three arguments.

The extremist argument: "Population and Global crisis of the world's economic and social evils to excessive population growth" (Todaro and Smith, 2009:311). Unrestrained population increase is seen as the major crisis facing humankind today. It is regarded as the principal cause of poverty, low level of living, malnutrition, ill health, environmental degradation, and a wide range of the social problems. Example, India and Bangladesh.

The theoretical argument. The population poverty cycle theory is the main argument advanced by economists who hold that too rapid population growth yields negative economic consequences and thus should be a real concern for developing countries. (Todaro and Smith, 2009:312). Advocates starts from the basic proposition that population growth intensifies and exacerbated with the condition of underdevelopment. Population growth is believed to retard the prospects for a better life for the already born by reducing savings rates at the household and national levels. It also severely draws down limited government revenues simply to provide the most rudimentary economic, health and social services to the additional people. This then reduces the prospects for any improvement in the levels of living of the existing generation and helps transmit poverty to poverty to future generations of low -income families.

A simple model of economic growth was not left behind in addressing the problem of population growth in the economic sectors. Neoclassical growth model, Solow takes that " the rate of saving, population growth and technical progress as exogenous " (Bucci, 2003). Solow indeed is mathematically represented his growth model in the following equation. There are to inputs capital and labor which are paid their marginal products. Assuming a Cobb- Douglas production functions the production at time is given by,

$$Y(t) = K(t)^{\alpha} A(t) L(t)^{1-\alpha} \quad 0 < \alpha < 1 \quad (3.1)$$

Where, Y is Output, K is capital, L is Labor and A is a level of technology. Results and discussion.

Negative consequences of population growth

The latest empirical research reveals the potential negative consequences of population growth for economic development into seven categories. Its impacts on economic growth, poverty and inequality, education, health, food, the environment, and international migration. Rapid population growth lowers per capita income growth in most less developed countries. The poor bears the brunt of the negative effects of

population growth. They become landless, face loss in jobs and the government reduction of expenditure on education and health.

Economic stagnation. Rapid population growth lowers per capital income growth, in most developing countries are dependent on agriculture and experiencing pressures on land and natural resources. Thomas Malthusian (1766-1834) asserted that population was increasing faster than food production which lead to global starvation. According to him, there is relationship between economic development and population growth. Todaro and Smith, (2009:298) claim that ".....when minimum level of income per capita is reached, population begins to grow". Therefore, Modern day neo-Malthusian, poor nations will never be able to rise much above their subsistence level of per capital income unless they initiate preventive checks (birth control). The desired number of children can be expected to vary directly with household income although direct relationship may not hold for poor societies. It depend on the strengths of demand for children relate to other consumer. Children in poor societies are seen partly as economic investment goods in that there is an expected return in the form of both child labour and the provision of financial support for parents in oldage. This is according to the micro economic households theory of fertility.

Poverty and inequality. Analyses of household surveys from many African, and other developing countries have shown that, large families are generally poorer. Angemi (2003) finds that larger families, which consist of many dependent children, face an additional increase in poverty. Example, reduce in fertility of one child would reduce the likelihood of a household to fall below the poverty line by 3-4%. It would lower the dependency burden that would have the effect of reducing household poverty by 1% another 1%. "Poverty exists when one or more persons fall short of a level of consumption of goods and services deemed to constitute a reasonable minimum, with in some absolute sense or the standards of a specific society" (Lipton and Revallion, 1993:1). Inequality been hypothesized to negatively affect growth through several challenges. It has to be noted that, inequality may result in under investment in such as on education, health and physical capital leading to lower growth. Cingano (2014) finds that increases in inequality have a negative impact on economic growth. It is adversely interact with human capital to impede growth, hence it harm growth and that inequality is irrelevant for growth. According to simple a simple solow-Swan Model, poverty can foster an increase on population, which can retard economic growth (Revallion, 2016).

It restricts the opportunities of parents to educate all their children. Todaro and Smith (2009:313) assert that " at national level, rapid population growth causes educational expenditures to be spread more thinly, lowering equality for the sake of quantity ". This is to say that, larger family size and low incomes denies the schooling opportunities to the family members as it reduce the amount of education that children receive. Kaznets (1973) shows that, the effect of population growth upon the amount of

education involves the demand for education, the supply of education, and budget constraint. The demand of education may be fruitfully analyzed on the basis of human capital theory on the assumption that education is an investment, a rational weighing of present expenditure versus future return. The theory is much the same at the household as the cost of education per child may be seen as affected by the number of children, whereas at the national level there is increasing marginal cost with additional children. There is indeed some negative effects of population growth upon the amount of education in both LDCs (Less developed countries) and DCs (Developed countries), but their effect is less severe than has been thought. We can separately analyse the effects of fertility in primary, secondary and tertiary enrollment as well as upon educational expenditure. The theory of population growth's effect upon the amount of education involves the demand for education.

Health. Health facility harms the health of mothers and children, the health risks of pregnancy. A World Health Organization population (WHO) report published in 2005 explains that, "overpopulation" is a breakdown of the ecological balance in which the population may exceed the carrying capacity of the environment". Meaning that, weakened food production, leading to inadequate food consumption and malnutrition.

A report from Cornell University suggests that Malnutrition makes people more susceptible to life-threatening diseases like Malaria and respiratory infections. From 1950 to 2007 Malnutrition increased by 37% and is linked to six million child deaths a year (UNICEF, 2006). Overpopulation has resulted in poor sanitary conditions and the destruction of rivers and water bodies especially in sub-Saharan Africa, Asia and other developing countries. UNICEF and WHO reported in 2004 that every year, unsafe water, coupled with a lack of basic sanitation, kills at least 1.6 million children under the age of 5 years. In 2004, more than 3 out of every five rural people, over 2 billion did not have access to a basic sanitation facility.

Food. Refers to any nutritious substance that people or animals eat or drink or plants absorb in order to maintain life and growth. Famines tend to be thought of as acute periods of crisis, and are in that sense to be distinguished from more chronic manifestations of hunger that may in some places represent normal circumstances, despite being responsible for large numbers of deaths. Given the typically political nature of outbreaks of such famine crises, it may make more sense to look for an effect of population growth on the longer term trends of hunger and malnutrition. According to Todaro and Smith, (2009: 313) claim that "feeding the world's population is made more difficult by rapid population growth". A larger fraction of developing country food requirements are the result of population growth must be introduced more rapidly, as the best lands have already been cultivated. International food relief programs become more widespread.

International migration. Refers to the movement of individual or groups from the poorer, less developed countries to the richer (more developed countries)which involves permanent or semi permanent change of usual residence. These flows have changed with the fluctuating economic and social circumstances of particular sending or receiving countries. The impact of migration on the development process is much more pervasive than its exacerbation of urban unemployment and underemployment (Todaro and Smith, 2009:356). In fact, the significance of the migration phenomenon in most developing countries is not necessarily in the process itself or even its impact on the sectoral allocation of human resources. It has recognized that migration in excess of job opportunities is both a symptoms and a contributor to underdevelopment. Migration worsen rural -urban structural imbalances in two direct ways such as the supply side where internal migration disproportionately increases the growth rate of urban jobs seekers relative to urban population growth, which itself it at historically unprecedented level because of the high proportional of well -educated young people in the migrant system. Understanding the causes, determinants, and consequences of internal rural -urban labour migration is the central to understand the impacts of population in migration and formulating policies to influence this process in socially desirable ways.. Example, would be land tenure arrangements, commodity pricing policies, credit allocation, taxation, export promotion, import substitution, commercial policies, the geographic distribution of social services , the nature of public investment programs, attitude towards private foreign investors, the organization of population and family planning programs, the structure, content and orientation.

Environmental degradation. Todaro and Smith, (2009) claim that Rapid population growth contributes to environmental degradation in the form of forest encroachment, deforestation, fuelwood depletion, soil erosion, declining fish and animal stocks, inadequate and unsafe water, air pollution and urban congestion. Meaning that , the use of resources and the impact of environmental issues are not equally around the globe. For example, the United States 5 % of the world's population, currently produces a full 26% of Co2 emissions. The most vulnerable people populations also experience decreased access to clean water increased exposure to air pollution and diseases which may result from decreased biodiversity and may feel the impact more immediately as local resources including plant and animal deplete. Ewing et al., (2010) claim that rapid population affects the consumption of resources (land, food, water, air, fossilif fuels and minerals) and wastes products such as air and water pollution, toxic materials and greenhouse gases.

Figure 3. World wildlife Find. Deforestation.

Scientists predict that human activity of deforestation will have a long lasting impacts on the environment. The end of 19 century at the beginning of 20 Century show that global deforestation significantly increased the concentration of Carbon dioxide in atmosphere due to burning of fossil fuels which counts an increase of More that three times the Carbon dioxide emission (Dodds, 2008:38).

Recommendations

The main question of addressing the issues of overpopulation is how to come to grips with the issue that is growing above its limits. Environmental activities and experts on population argue that global governmence is a key element in implementing measures, but global network cannot enforce laws and expert pressure equally among nations.

National versus International institutions. Even though climate change, as a result of



overpopulation, is a global issue that cross border , national institutions posses more power to regulate carbon emissions compared to international institutions. "Emission reductions need yo take place within the territories of over 200 sovereign states of the

world" (Solvall, 1971-200). While international institutions serve as guides to national institutions in fulfilling their goals.

Governance and sustainability.

- **Urbanization.** With respect to urbanization, local and national governments plan on expanding cities and the policies they bring, affects the population size of the urban areas. In densely populated cities Carbon dioxide emission decrease due to public transportation that is shared and because of reduction in the use of private car. As the world second largest economy and the largest carbon emitter, China aims to take action and reduce its industrial energy demand in 2020 by 20% while increasing productivity (Solvall, 1971).

- **Food and water.** In response to growing demand for food and water, international agencies and organizations have implemented projects to help Nations deal with consequences of climate change but the core of the problem is grounded in unequal distribution of sources. The consultative Group for international Agricultural Research (GIAR) worked on projects that deal with adjusting to climate change.

- **Environmental pollution.** Even though overpopulation is argued to be one of the main characteristics of environmental degradation, some scientists argue that with a lower of population, the impact on environment would be the same. A smaller number of people would not ensure an end to global warming and deforestation as fewer people could still conduct misguided or destructive policies of economic development and environmental mismanagement (Stenoff,48). Nevertheless, the process of environmental degradation would take a slower pace and government would have more time to take measures of preventions.

Conclusion and recommendations: In a short run, since publication of Thomas Malthus' Essay on the principle of population in 1798, development economists and policy makers have devoted a good deal of effort to address the problem of population growth. There is a divergence of opinions regarding the desirability of population growth. Some view rapid growth as a real problem while other asserts that it is not a matter of grave concern. So cross countries evidence on the population growth and economic growth relationship is not consistent and uniform. It should be taken into account that, innovation and technology as Earth's saviour, not only to extend the planet's human carrying capacity, but to also improve the quality of life for each individual, advances in food production technologies, such as agriculture, water purification and genetic engineering may help to feed the masses.

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