

Countries with Rapid Population Growth and Resource Constraints: Issues of Food, Agriculture and Development

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Abstract

The population growth control is hot topic to be addressed in various countries as population growth affects the availability of the resources to the masses. The population growth has not only limited the use of the available resources but it is also dangerous for the overall growth of the country. In addition, it also creates an extra pressure on the agriculture sector of that country. Many countries of the world are witnessing the rapid growth of the population and therefore there is an urgent need to implement the rules for same sort of food security, but there are some constraints which need to be tackle before implement the rule for the food security. Apart from this, rapid population growth make one country's dependency over the other country for the export of the food. This paper has been written to look into the matter of the food scarcity because of the population growth and also the development in field of the agriculture in order to increase the food cultivation to make the country self-sufficient for the resources of the food.

Keywords: Agriculture, Employment, Population growth, Rapid Growth, Scarcity of food

Introduction

The population of the world is not stationary as it has varied with a low or high margin depending upon the conditions. These conditions are also varied time to time. The growth of the population was not so high 20 to 30 years back. That time was also witnessed many years, when the population growth was negative and the mean amount of birth in a certain time was less than the number death. The reason behind this was the technological exposure of the human kind [1]. In fact, Medical facilities was not so good that time and more people died because of the lack of medical facilities. The medical facilities have been increased with time and treatment of many incurable disease is also found which are proved to helpful to save the life of the people.

The recognition that the planet is likely to be on a relatively smooth path towards a near-stationary society affects the debate on population, progress, besides sustainability. The idea that the trend to ever-increasing populace, dubbed "population detonation", poses a threat to our health and life which is appears to be losing traction among the general public. The consequences of population changes toward under fertility and population implosion have become the subject of the debate [2]. These suggestions are supposed as main emerging glitches eventually everywhere.

Population growth leads the scarcity of the food grain by increasing the consumption rate of the food grain. This problem needs to be tackled with a great interest. It is obvious to implement such step that will slow down the growth of the population and at the same time help the farmers to increase their production to coup up the emerging scarcity of the food grains. Leaving aside the larger theme, we might wonder if these global demographic projections suggest that "population explosion"-related agribusiness problems are losing much of their importance. The growth of the population and scarcity of the food grain can be handle with a collective action of the different government as it is evident that agriculture and population growth problem is not a local, but it is a global problem and must be handle with a collaborative action from the different government of the world. [3]. The simple answer is that these problems are still very important, for a variety of reasons. The vision that numerous societies, numerous of which have insufficient food ingesting levels, will endure to have quickly increasing inhabitants for some time is particularly important.

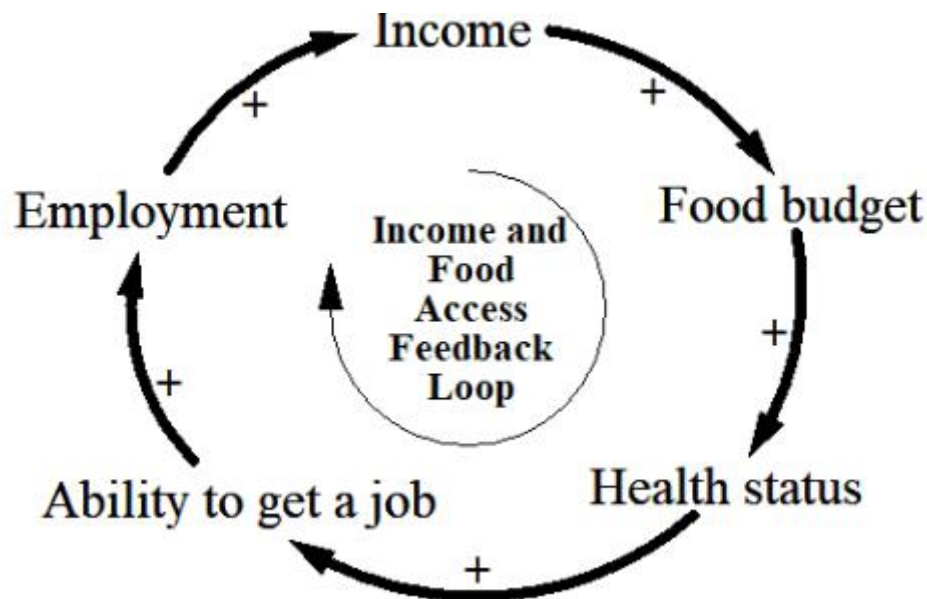


Fig. 1: Cyclic Relationship Between The Income ,Food And Living Standard Of An Individual

The fig.1 is showing the relationship between the food, income and living standard of an individual. In terms of global health, the challenges associated with populace growth will continue to outnumber those associated with fertility deteriorations below replacement levels in many developing countries. The ability of the countries affected to deal with the declines is largely within their grasp. Of course, one obligation also remember the benefits to the countries witnessing these declines as well as the ecosphere at large, such as lower environmental impact and reduced urban congestion [4].

Due to its geographical isolation form population centers, inadequate infrastructure, high disease incidence, or other factors, many of the countries currently experiencing population increase have low agricultural infrastructure or capabilities that are difficult to exploit. Agriculture is also a big part of their ecosystems, with agriculture accounting for a large portion of their gross national product and exports, as well as a significant portion of their population [5]. If future population rises at the same rate as expected, and urbanization or mass migration to other nations provide no more outlets than predicted by demographic forecasts, those countries will be condemned to a life of poverty. Table 1 has been showing the name of the countries taken into consideration for the study.

Table 1: The Name of the Regions Considered Has Been Showing the Name of the Countries Taken in to Consideration for The Study

Sl. No.	Country
1	Afghanistan
2	Benin
3	Burkina Faso
4	Burundi
5	Chad
6	Congo DR
7	Ethiopia

8	Madagascar
9	Mali
10	Niger
11	Somalia
12	Uganda
13	Angoda
14	Congo
15	Iraq
16	Liberia
17	Mauritania
18	Yemen

Gallup and Sachs [6] reflect that ability for hot regions to absorb more labor productively in agriculture is small. As a result, it's possible that the Malthusian spectra will persist at the local level in many of these countries, despite the fact that global population growth might be zero and insufficient food production capacity exists in other areas of the world. For food survival and wellbeing, as well as overall growth, these governments have few options but to endure to depend on more farming resource extraction [5].

The 19 countries have been analyzed with a high rate of the population growth rates for the period of the 50 years. The average growth rate has been identified 1.8 percentages in a year or little more than that. The 1.8 is considered as the limiting criteria for the growth rate as the growth rate more than 1.8 is considered high and growth rate less than 1.8 is considered as low growth rate of the population. The demographic characteristic of the selected countries has been related with the food security in addition to socio economic characteristics. The analysis of the past data has shown that in last four decades at least 14 countries are not able to achieve the target of apparent consumption of food grains [7]. The average daily requirement of the calories for a male is 2500 kcal and for a female is 2200 kcal. The scarcity of natural crops in some of these nations does not bode well for agriculture's ability to fulfil its potential and sustain even the current insufficient levels of nutrition. For example, study concludes in a study that the food security environment in Ethiopia is likely to worsen even under their optimistic expectations, and that "the population–environment–agriculture nexus in Kenya appears to have dropped underneath the thresholds of sustainability."

One could be defensible in interrogative whether these countries' expected populace growth and ever-increasing rural inhabitants could be maintained. This indicates that the population projections' assumptions (rates of change in fertility, mortality, and, in particular, internal and external migration) will need to be revisited [8]. There is a strong need to integrate the demographic projections' theoretical assumptions with additional variables that illustrate the challenges many of these countries face in sustaining inhabitants that are multiples of their current population size. The emphasis is on identifying apparent mismatches between demographic forecasts and improve agronomic potentials, which are considered to be critical for growth.

1.1. Characteristics of Agriculture-Dependent Countries with High Rates of Population Growth

In the five decades leading up to 2050, the demographics of 18 countries are expected to grow by a factor of at least 2.6 (Ethiopia, Iraq) and up to just over fivefold (Uganda). Naturally, not every one of them are faced with the view of having to rely according to their own agriculture for growth and food safety. The scarcity of soil production does not exclude a country's ability to develop. There are numerous examples of countries with limited agricultural resources but adequate food consumption and nutrition levels, including Japan and several

developing countries with mineral wealth. Several nations in Near East as well as North Africa are among the latter, where oil consumes the foundation for abundant of the income growth that has fueled food demand although also as long as the means to finance massive increases in food importations to encounter that request.

Yemen, another nation with limited natural crops and one of the world's highest population growth, depended heavily on emigrant remittances to fund large rises in food imports. Though, a case could be complete for 12 of the 19 countries seen in the upper part of the graph that, at this phase in their growth, they have insufficient selections but then to endure relying primarily on their individual agriculture to increase incomes as well as food supplies, as well as to provide a foundation for their wider economic growth [9]. Their financial reliance on agriculture exceeds 33% of GDP, which distinguishes them from the rest of the world. The other six countries are much less reliant on agriculture, owing to their abundance of other natural possessions.

These 12 countries exhibit the following characteristics:

- They had a low or very low per capita food intake and a high rate of malnutrition.
- They're all low on the Human Development Index (HDI), a composite index that takes into account income, life expectancy, and literacy levels.
- Nonagricultural capitals such as ores, reserves, in addition to fuels do not provide significant rents.
- The majority of them are landlocked, which is a significant disadvantage when evaluating growth opportunities and potentials.
- All of them are in the Least Developed Country category as defined by the United Nations.
- They have shares of agriculture in gross domestic product in the range from 30 to 56 percent.
- Rural areas account for a large portion of their population. Furthermore, their rural populations are expected to continue to expand, with some countries' rural populations more so than doubling between 2000 and 2030. These two factors indicate that, barring unexpected events, the countries' overall growth and poverty reduction will be primarily dependent on rural—primarily agricultural—development. As a result, in light of projected rapid population growth, I address the question of whether their agricultural resources are adequate to support production growth rates that are consistent with improvements in food security.

1.2. Agriculture-Related Constraints to Attaining Food Security

Examining the countries' water resources that have the ability to grow crops, including under both rainfalls fed conditions, offers a first glimpse. Estimates of these opportunities are based on FAO (Food and Agriculture Organisation) and gro Ecological Zones research, as well as FAO's irrigation potentials. Most countries are still far from hitting their agriculture frontiers, at least when presented on a national scale. It is important to remember, however, that national projections suggesting no greater resource scarcities can exist side by side with extreme scarcities at the local level acting as effective growth constraints. Such local scarcities are not easily overcome by the availability of resources in other parts of the country. Chad and the Democratic Republic of Congo (Congo DR) are two countries with abundant land resources in comparison to their existing and expected populations. Although a large portion of this land is covered in forest (closed forests cover 50% of the country's total land area), the latter country has 195 million ha (or 82 percent of its land area) identified as suitable in varying degrees for growing rain fed crops. [10].

These results indicate that, even as the Congo DR's populace more than triples to 177 million by 2050, agricultural limited resources would not be a barrier to solving the country's serious food security issues. In time-honored fashion, demographic change will continue in agricultural expansion where the potential for doing so occurs if it is persistently followed by weak opportunities for alternative avenues of production. Needless to

mention, the country's vast mineral resources provide alternative growth opportunities, reducing the country's reliance on agriculture.

Further nations with rapid populace development charges and tall reliance on farming face a different future. Burundi has the lowest ratio of land to population. Niger also has limited agricultural expansion capacity, a condition that will quickly worsen if the expected population rise of 2050 occurs and no alternative sources for alleviating demographic pressure on agriculture are identified. Just about 13 million hectares (12 percent of the country's total terrestrial area) are proper for rain-fed husbandry, with 45 percent rated as marginally suitable.

Because of Niger's limited agrarian resources besides harsh agro-ecological climate, local agriculture will have a difficult time providing food, jobs, and proceeds for such a great populace while also stimulating overall growth. Alternative growth solutions that would greatly minimize reliance on agriculture, on the other hand, are scarce, as the country's poverty-reduction strategy recognizes. In the 1970s, Niger's uranium-producing sector helped to accelerate growth, but after export prices plummeted and agriculture was hit by repeated droughts, development stalled [11]. The World Bank places Niger in the group of "Low-Income, Severely Indebted" nations [12].

If we want to custom agro ecological capacities as a proxy for evaluating the compatibility between demographic forecasts for countries on the list and the development probable of their natural crops, we would need a more reliable predictor. The nearest we can get to such an estimation is to direct each country's land besides water donations as possible future development of the food crops. The cereals category (wheat, coarse grains, and milled rice) lends itself to this position as a yardstick because it consists of culturally homogenous food crops (grains).

Cereals are considered as the important input in the food item of an individual, cereals are also most important food intake for the 1 plus year children as their growing age demands more food and energy apart from the breast feeding. It has been displaying the resulting projections of potential dairy products development in 2050 based on two presumptions: (a) cereals will occupy the same proportion of total cropland suitable for agricultural production as they do now, and (b) crop harvests in 2050 will be duple that of today.

The evolution of these dependent dimensions over the last four decades is also seen to assess how credible these hypotheses are. Only two of the ten countries with data saw yields nearly double, while seven others saw little to no growth, and Niger saw a decline. As a result, a doubling over the next 50 years is a very ambitious prediction, but one that is well within the scope of technological viability based on current technology. In terms of land that could be used for cereal production, the theoretical capacity appears to be high in some countries, modest in others, and non-existent in others.

As a result, even using the most optimistic projections, four countries will be unable to sustain their current per capita output levels in 2050. Given the importance of cereals in their diets, this incapability poses a thoughtful threat to crop production in Afghanistan and Niger. It may be less significant in Burundi as well as Uganda, where vegetables account for just 22–26 percent of calories and cassava, sweet potatoes, plantains, and mushrooms account for the majority of the rest. The other seven countries, on the other hand, have the possible for greater per capita demand, which is in approximately cases well overhead any possible per capita consumption in 2055. The considerable manufacture potential present in countries with food insecurity and mostly semi-arid agriculture subject to weather variability is surprising. This finding defends a closer analysis of the data besides expectations that were recycled to determine output potential.

Naturally, the failure of many countries to increase land productivity in the past does not mean that they will be unable to do so in the future. The mainstay of agriculture sector has been yield development, which has resulted in improved agricultural production in most nations that have finished such evolution, especially those operating underneath severe land constraints. However, it appears that supportive policies, especially those that encouraged the age group and of technological improvements, as well as regulations or other conditions that dissemination offered economic incentives for their adoption, were at the root of such accomplishments. A deserving candidates, of course, was the availability of agro-ecological conditions (e.g., the ability to extend

irrigation) that allowed for the genetic potential of high yielding resulting from agricultural development to be exploited.

In the absence of substantial even use and agro ecological potentials, it is unclear because any kind of synthetic or endogenous “Bose up consequence” of maintainable intensification will play a main role throughout levitation agricultural output at rates directly associated with the challenge posed by fast-growing populations. When it comes to resources depletion and soil degradation as a result of the economic stresses in rural areas, the evidence, especially from the literature, is mixed. As often as not, existing research suggests that a slew of other variables, such as infrastructure growth, marketplace access circumstances, and helpful policies, play a role in deciding whether or not rising population pressure is linked to success or disappointment throughout the quest for long-term upsurges in land output.

Johnson spoke of a “political Bose up effect” This serves as a link among the concepts of endogenous besides policy-supported deepening. He proposed that increasing population densities trigger policymakers to give agricultural research a higher priority, with the results contributing to increased agricultural productivity. It is endeavored to test this suggestion and discovered relatively favorable associations between rural population sizes and national agricultural research system investments in plant breeding [13]. However, his results for Sub-Saharan Africa are for the entire continent.

Given the major challenges confronted in developing yield-raising genetic developments suitable for dryland agriculture in parts with sometimes low besides irregular rainfall, it's difficult to tell if they'd smear equally to the agro-ecological circumstances of most of the countries studied here. It's no surprise that crops suitable for these environments are frequently referred to as orphan crops due to the lack of attention they've conventional through farmer support systems. This isn't to say that appropriately targeted investments in plant breeding can't help deprived areas achieve meaningful changes in food security. The performance of improved high yielding cassava cultivars in Nigeria and Ghana in rising food consumption is instructive. At the same time, modern biotechnology's capacity to transcend agro-ecological constraints is generally accepted.

Concerning property, serious concerns have been voiced that the land area listed as having rainfall fed agricultural production potential in the FAO/IIASA study is overestimated and/or will not be able to be cultivated in the near future. It has been proposed that land with agronomic potential but not yet underneath cultivation is being overestimated in a systematic way. Land accessibility, disease prevalence, and socio-political factors are perhaps more serious factors, as the serious problems with settlement as well as transmigration systems in Ethiopia and elsewhere have shown. The extensive cultivation of moderately appropriate and crop failure areas in Ethiopia, as well as frequent food deficiencies even during bumper crop years, will lead one to believe that the problem is primarily due to extreme land shortage at the national level. However, there are vast undeveloped tracts of land in the lowlands that can then be developed. “There are areas lacking in basic infrastructure and posing substantial health risks”. As previously reported, extreme land shortages only at local equal are difficult to resolve.

2. DISCUSSION

Due to the extreme limited growth potential provided by their agricultural resource endowments, demographic forecasts for approximately of the republics inspected here expect increasing problems in addressing deficiency besides food insecurity. The presumption that, for close to zero countries with a strong dependency on agriculture, agriculture must be a primary mover in their overall growth is at the root of the supposed unsuitability between demographic purpose and agricultural capital. It was noticed that there's a lot of agreement in the developing countries that it's a smart idea. The question of agrarian resource abilities, which will support such a position for agriculture, is sometimes not discussed as part of both underlying studies. It to the conclusion that, at minimum in approximately nations with fast demographic development, there is a strong circumstance to be made that reserve scarcities may pose serious barriers to farming's ability to play such a part.

3. CONCLUSION

In either case, agriculture's contribution to growth is based on its ability to generate income rather than just food staples. Any tree cash crops may be able to fill the void. The problematic through these other tropical cash and export harvests is that they consume incomplete destructive marketing potential: coffee and cocoa, for example, are primarily expended in manufacturing republics with limited growing potential due to virtually stagnant populations and relatively tall resource consumption currently achieved. Palm apply oil, on the other hand, has been a star performer in global markets due to increasingly increasing the demand in other developing countries. Therefore, it is necessary to have a broad perspective in deciding the strategies about the crop pattern in such a way that it is coup up with the problem of the food scarcity and also create the enough cash to the farmer to support them with a good life.

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