

Sustainable Development Project

**“What are the Implications of Changes in
the Global Population on Life in Ireland?”**

Introduction:

The Demographic Transition Model:

Since 1750 to the present day the global population has grown massively from the order of roughly 500 million people to a figure that is fast approaching 7 billion. During this period industrialised or developed countries have completed what is known as the demographic transition model. The transition model has proven to be an accurate model of past population trends. A country or region will progress through the model as follows:

- Stage 1 – High fertility and mortality rates keep the population constant. There is minimal growth or decline at this step, only minor fluctuations.
- Stages 2 and 3 – Advances in technologies and medicine mean that the mortality rate decreases leading to a rapid population increase since fertility rates are still high.
- Stages 4 and 5 – Fertility rates decline due to numerous factors such as education and the role of women in society. The population increase will slow down until fertility rates are in line with mortality rates. In some cases the population may decrease slightly, as has been seen in Japan over the past thirty years.

Why are we seeing this population boom?

This transition sees countries move from predominantly rural societies with high fertility and mortality rates to predominantly urban, industrialised societies with low fertility and mortality rates. All developed countries today have completed this transition model, but only about 1.2 billion people are classified as living in developed countries according to the Population Reference Bureau. This means the majority of the remainder, 5.7 billion people, live in developing countries in the growth stage of the demographic transition and consequently, the global population is continuing to grow at an alarming rate with no signs of stopping in the near future. Projections indicate that the global population will reach 7 billion people in the second half of this year, 2011. By 2050 it is estimated that the global population will be 9.15 billion.

Context in which research was carried out

It is at this point I will take the opportunity to highlight the title of the project. I am investigating the implications of changes in population growth on life in Ireland, as opposed to the implications on Ireland itself. A report on the latter topic would seem slightly impersonal because when you refer to country as opposed to the people of a country it would seem as if you were simply dealing with an economic position instead of all the elements of life in that country. At this stage it is almost impractical to refer to economics alone as it is only one aspect in the metrics of sustainability, and if the population of the globe is to increase as projected, sustainability will be vital to our survival. I tried to refer back to the pillars of sustainability (i.e. the social, environmental, operational, and economic aspects) when discussing the three main research topics of this report. These topics in themselves are related to the sustainability module in that they deal with; energy, food, and the

environment and the implications on each of these, -from an Irish perspective-, due to an increasing global population. In the findings section of the report I will outline some effects of a growing global population, while in the discussion section I will describe the implications of these effects on Ireland.

Findings:

A Growing Global Population Will Result In:

1. Increased Energy Demands

According to Reuters the U.S. energy forecasting agency, global energy demand is expected to soar by 44 per cent over the next two decades with most of the demand coming from developing countries. Almost 75 per cent of the rise in global energy demand by 2030 will occur in developing countries, particularly China, India and Russia. Increasing wealth in emerging markets such as these leads to increased energy demand. Businesses and factories in particular, require significant amounts of energy in the form of both electricity and petroleum-based fuels in order to operate. As economies industrialize, energy demand increases.

Renewable energy, like wind and solar power, will be the fastest growing energy source, making up 11 per cent of global supplies. Biofuels, including ethanol and biodiesel, are expected to reach 5.9 million bpd by 2030. Renewable energy is the fastest growing source of energy, with projected consumption increasing by 2.1 per cent annually from 2005 to 2030. The reasons behind this fast rate of growth are the; high projected prices of oil in the long run, increasing costs of finding and extracting oil, and environmental concerns. Renewable energy however is more expensive to produce than energy from fossil fuels, so it is less often used in developing countries.

2. Increased Food Demands in Developing Countries

According to a paper by the United Nations' Food and Agriculture Organisation (FAO), global food production will have to increase by 70 per cent to meet the demands of an additional 2.3 billion people by 2050. According to the latest UN projections, world population will rise from 6.8 billion today to 9.1 billion in 2050 – a third more mouths to feed than there are today. Nearly all of the projected population growth is to occur in developing countries. Sub-Saharan Africa's population is expected to grow the fastest (up 108 per cent, 910 million people), and East and South East Asia's the slowest (up 11 per cent, 228 million).

The FAO has outlined their predictions with regard to demand for food in the future and say that the rising demand is down to both population growth and growing incomes. Demand for cereals (for food and animal feed) will reach some 3 billion tonnes by 2050. Annual cereal production will have to grow by almost a billion tonnes (2.1 billion tonnes today), and meat production by over 200 million tonnes to reach a total of 470 million tonnes in 2050, 72 per cent of which will be consumed in developing countries, up from the total of 58 per cent today.

Dairy consumption is also growing rapidly among those in developed countries. Currently the FAO recommends that an adult consumes 180kg of dairy produce per head per year. At the moment the average Chinese person consumes just 20 kg annually, but this is increasing dramatically with the Chinese government actively encouraging its citizens to drink more milk.

3. An Increase in Environmental Migrants

A growing global population will put a huge strain on the world's resources. It is expected that the exhaustion of resources in certain parts of the world will have serious repercussions for the environment. Over-exhaustion of the land can lead to desertification as seen in the Sahel region surrounding the Sahara desert in northern Africa. According to Oxford based expert, Norman Myers, Morocco, Tunisia and Libya each lose over 1000 square miles of productive land each year to desertification. Widespread felling of forests as happened in south-central Asia can lead to flooding as is common to regions such as Bangladesh. These and other changes to the local environment of a region can lead to environmental migrants or environmental refugees. In 1995 half of Boha Island in Bangladesh became permanently flooded leaving 500,000 people homeless. These are examples of environmental migrants, and in the not so distant future it is widely expected that this will be a common occurrence throughout much of the developing world, with climate change and the growing global population cited as the two biggest contributors. The United Nations University's Institute for Environment and Human Security (UNU) has said that well over 50 million people have already been displaced from their homes by environmental crises.

Here are some more examples of environmental refugees as cited by Norman Myers who was chief investigator in the study *Environmental Exodus: An Emergent Crisis in the Global Arena*.

- 3.3 million people will be affected by flooding and inundation of settlements in low-lying areas in Indonesia by 2070. Excessive pumping of ground water in Jakarta has caused the land to subside alarmingly, and is now at considerable risk with the prospect of more than a one meter sea level rise by 2070.
- Large populations living on river deltas in Vietnam where almost 5,000 km of dikes are in need of strengthening or construction.
- 7.1 million at risk in India
- Submergence of parts of Manila and other areas of the Philippines

At this stage it is impossible to say just how many people will be affected or to what parts of the world these people will seek refuge. While it is likely that the future will bring growing numbers of non-nationals to Ireland it is highly unlikely that we will receive an influx of refugees. Given our relatively small population a high number of immigrants would obviously be noticed and questions would have to be asked. This is assuming that as predicted most of the world's environmental migrants will come from the developing world, generally south of the equator. If on the other hand environmental changes were to occur in regions located within the European Union, then Ireland could see large numbers of immigrants and due to E.U. legislation there would be little or nothing to

curb the flow. Whatever the likelihood of this occurring, it is obvious there would be massive implications on life in Ireland.

Discussion/ Conclusions:

Impacts on Life in Ireland:

1. Increased Energy Demands

SOCIAL:

. The social outlook on energy will gradually change so that renewables will play an ever increasing role in day to day life. While this will have obvious environmental advantages, it is more likely that the switch to “greener” sources among society will be due to economic reasons, with renewables becoming the more economically viable option for people. The renewable energy sector is expected to play a big role in the economy in the near future and will benefit Irish people by providing much employment.

ECONOMIC:

Ireland is a country with vast potential when it comes to generating renewable energy. Not only is there suitable agricultural land available for the growing of biofuels, but Ireland also has a vast resource in its Atlantic waters. It is a windy location suited to the installation of off-shore wind farms and also has another form of power in wave energy. The 2005 Ocean Energy strategy from the DCMNR (The Department of Communications, Marine and Natural Resources), cites Ireland as having huge Ocean Energy potential especially with regard to its wave resources. According to the Irish Wind Energy Association website, the wave energy resource offshore is greater than 6000MW or 59TWh per annum. This potential it seems is slowly being realised and energy production based on renewable sources has increased significantly (by 94%) since 1990. This has led to a share of domestic production that is higher than the EU-27 average of 12%. Ireland has however a very long way to go before being self-sufficient, or ideally a net exporter of energy to the rest of the world where the energy demand is rising even faster than the population. The potential is there however, and in response to the increasing global energy demand, renewables will play a huge part in the Irish economy.

ENVIRONMENTAL:

A move towards renewable energy production in Ireland will see a reduction in our co2 emissions.

2. Increased Food Demands

ECONOMIC:

Ireland is a country in which agriculture plays a large part and employs about 6 per cent of the national workforce according to Teagasc, the Irish Agriculture and Food Development Authority. An increase in demand for food globally will obviously prove to be beneficial to Irish agriculture, providing an outlet for much of our produce. This will come as a welcome relief to Irish farmers, many of whom have literally struggled to receive any sort of income over the past number of years due to low milk prices and competition in the beef trade from countries like Brazil. The abolition of milk quotas throughout the European Union in 2015 has presented Ireland with a huge opportunity to supply a world dairy market that is expanding at 2.5 per cent annually. The same could be said for beef and tillage farmers whose produce will help meet the growing demand. This demand it has to be noted is not only due to an increasing global population but also to dietary shifts that occur when a people have more disposable income and desire more meat and dairy produce in their diet. This can be seen in the diets of the growing middle classes of Asia. It is clear therefore that agriculture will play a huge part in the economy of Ireland in the near future. The sector will probably become more profitable and hence a bigger employer. Those people directly employed will benefit as well as the general population who should benefit from a growing economy.

SOCIAL:

Increased food demands globally will present Ireland with an opportunity as outlined earlier. From a social point of view society will benefit from the likelihood that greater numbers of people will find employment in the agricultural sector along with the spin off industries that result from it. Society in general will benefit from an improved economic situation in that there should be more money available at the disposal of the government. Of course the situation could also arise that the agricultural sector will not prove to be as beneficial to the economy as hoped. In this case Irish society would suffer along with the rest of the world from higher food prices. This would leave people with less disposable income thus contributing to the induced sense of woe that recession has brought to many struggling households. Also from a social perspective, the diet of the general population of the country would probably change in the event of astronomical food prices. Home grown food would become more widely consumed in the attempt of reducing consumption of expensive imported food.

OPERATIONAL:

The Irish government has the responsibility to ensure that all the citizens of the country are looked after. In the event of food prices increasing dramatically to the extent that large number of people cannot afford to buy food the government are ultimately responsible. The government would have to provide some sort of defence against food prices that are out of our control and therefore would have to actively promote and encourage citizens to produce as much of their own food as possible. In this way independence from global food market would be much higher on the government's agenda. This would be a far more sustainable approach moving forward and much less harmful to the environment.

3. An Increase in Environmental Migrants

SOCIAL:

From a social and cultural point of view, one would question how well a large group of immigrants with perhaps a vastly different culture would be received. Would there be a quick and warm integration or would there be social exclusion. Would different sets of traditions collide? At this point it has to be admitted that there are far too many variables to give any sort of prediction as to what life would be like in Ireland if such an event was to occur. Who is to know where the migrants would come from and what kind of culture they would bring with them. Do we know whether or not we will have a different outlook on global matters down the line? It is merely guess work at this point to try to predict any sort of eventualities of this nature. The only thing that is a certainty is that if such a scenario was to present itself, there would be massive changes to life in Ireland on a social front.

ECONOMIC:

Perhaps the economic impact of a large group of environmental migrants on the economy of Ireland is slightly easier to predict than the social impact of such a situation. A larger population means that there would be a larger number of people available for work. From a positive point of view it is possible that this could be an attractive force for foreign investment that would see a large and willing workforce. On the other hand, it is possible that there simply wouldn't be work available and therefore there would be a huge amount of people receiving social welfare. This would obviously have serious consequences on the economics of the country. In conclusion there could be obvious economic advantages but equally there could be disadvantages, meaning the success of the economy would hinge on how well and how quickly a large workforce could be integrated as a productive unit.

OPERATIONAL:

An influx of foreign migrants could mean that it would be no longer feasible to provide social welfare to people. Government would have to take a stand and reform the legislation of the country in order to ensure viability. This would mean that the unemployed who are available for work (i.e. not disabled) would be left to fend for themselves in a way that would mean Ireland would resemble America in this way. Of course the unpredictable nature of migration again leaves many variables and so this is only one possibility. Another would be that social welfare payment could be reduced so that they are in line with other countries.

Planning would have to play a much greater part in the operation of the country in the event of a large population increase. There would have to be a reform of many systems including healthcare and education in order to cater for a larger population. The provision of the necessary infrastructure would also have to be planned and provide. This would include the obvious such as housing etc. but also new forms, including religious infrastructure to cater for a more diverse population.

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