



Trade and Climate Change: UNEP and WTO Report – Focus on LDCs

Introduction

This briefing paper gives a summary of the World Trade Organisation (WTO) and United Nations Environment Programme (UNEP) report on trade and climate change with emphasis on its repercussions on Least Developed Countries (LDCs). This is the first time the WTO and UNEP have collaborated to report on the issue of global warming. A chart summarising effects of the climate crisis on the East African Community (EAC) has been added by the author on the basis of information available in other sources in the literature.

Climate Change: Manifestation and Impact

World temperatures are expected to increase between 1.4° and 6.4° C by 2100. At this point in time an increase of 2° C will be nearly impossible to avoid. This average is expected to be higher throughout Africa and Central Asia. Besides the temperature increase the number of severe weather events, such as hurricanes and tornadoes is also expected to increase. Different parts of the world will be affected positively and negatively: countries closer to North and South poles will experience warmer temperatures and once inhospitable land will experience melting of ice. Small island nations will be at risk of extinction due to rising sea levels again associated with the melting of polar ice caps and thermal expansion in oceans. Low lying islands will be at a greater risk of flooding from increased precipitation. Countries near the equator, many of which are LDCs, will experience unbearable heat. Some of the countries in Africa are already experiencing more frequent droughts and ruined crops, which are exacerbating the hunger crisis.

Health and Mortality

Health issues will become a greater cause of concern in Africa. Diseases

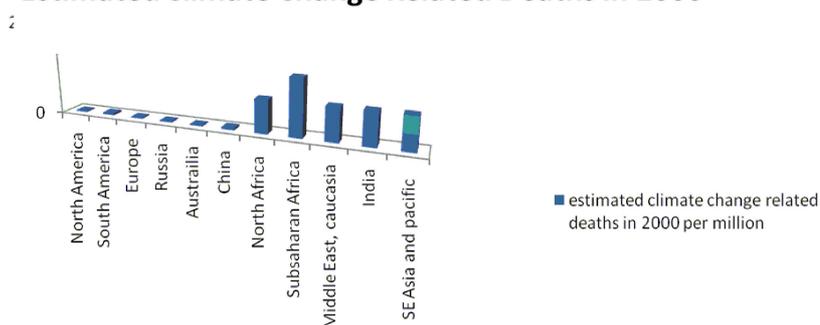
such as malaria and rift fever are expected to become more prevalent due to increasing mosquito populations. Incidences of cholera are also expected to rise due to lack of clean water. These health problems will only add to the misery caused by the AIDS epidemic and continue to lower life expectancy: Africa has already experienced more deaths as a result of climate change than any other region. African countries are also the least equipped to face new health crises or increase in the number of natural disasters due to financial constraints which impede investment in research and development for solutions to climate change. Ironically, these countries will be hit hardest by global warming, despite their own insignificant greenhouse gas (GHG) emissions.

As the graph shows there have already been numerous deaths linked to climate change. Sub-Saharan Africa (SSA) has been hit hardest. North Africa, the Middle East, Caucasia, India, Southeast Asia, and some Pacific islands have begun to suffer from global warming as well. Deaths related to global warming are attributed to increased crop failures, related starvation, and other severe weather events.

Weather Impacts

Severe weather events are predicted to increase, such as, hurricanes, heat waves, droughts, and fires.

Estimated Climate Change Related Deaths in 2000



Hurricanes are likely to harm small islands and coastal regions by damaging important infrastructure, often located near coastal areas. Fires may have an effect on the respiratory health of a country and lead to the burning of homes and infrastructure.

Severe weather changes will include increased precipitation in certain areas that may cause damage to crops, roads, bridges, and infrastructure used for trade. It may also exacerbate the contamination of water supplies. Increased precipitation will also lead to greater amount of saltwater intrusion as a result of flooding. This will lead to more water conflicts as a result of the salinisation and drying up of bodies of water.

El Nino is likely to impact small islands and Asian countries significantly. The frequency of El Nino and El Nina events have increased in recent years as a result of global warming. These events change weather patterns around the world. Many vulnerable countries are damaged by these weather patterns because they are unprepared for the ensuing destruction.

Impact on Agriculture and Food Security

Agriculture is an area where developing nations are expected to suffer greatly. Increases in global temperatures will make it impossible to grow crops that once flourished. People will have to adapt to growing new crop varieties or migrate. Some areas that were once fertile may not be able to support any crops. Increases in flooding will increase soil erosion. At the same time droughts will increase in frequency and lead

to shrinking livestock populations as well as crop failures. A two-three percent reduction in cereal production will increase the number of hungry people in the world by 10 million. Thus, developing countries will become more dependent on trade for food, but problems are anticipated as real food prices are likely to rise with decline in world food output. The tropical location and dependence on agriculture of most LDCs makes them extremely vulnerable to the effects of global warming.

Specific Country/Regional Experiences with Climate Change: The Case of East Africa

As noted earlier, SSA is the worst hit area in the world. Countries of the EAC will suffer greatly with climate change and lose many of their current economic opportunities including many export crops and tourism. The EAC will also be hit hard by health problems from vector borne diseases. Sadly, the EAC countries are inadequately equipped to face the upcoming health crisis. Table 1 lists specific threats that each member country of the EAC will/has face/faced.

EAC countries will require varied assistance to counter the impact of climate change. Assistance will be required to counter the loss of agricultural land, facilitate adaptation of economic structure to climate induced change in comparative advantage, and finally for the adoption of climate change friendly technologies. The EAC countries will be helped by a system of carbon credits as it will facilitate utilisation of surplus carbon credits for adaptation to climate change.

Table 1: Effects of Climate Change in Africa

Country	Effects of climate change taking place in Africa
Kenya	<ul style="list-style-type: none"> • 2001: worst drought in Kenya's history • 1997: deadly outbreak of malaria which had previously been eradicated • Melting of Mt. Kenya • Tea and coffee industry is likely to suffer in the future
Tanzania	<ul style="list-style-type: none"> • Malaria transmission rate has increased • Melting of Kilimanjaro ice cap • Maize industry is likely to be severely impacted
Uganda	<ul style="list-style-type: none"> • Irregular rainfall • Loss of revenue from coffee plants
Rwanda	<ul style="list-style-type: none"> • Rwanda has experienced decreased hydroelectric production due to decreased river flows • Climate change could aggravate political tensions in areas earlier characterised by genocide
Burundi	<ul style="list-style-type: none"> • Economy would be severely stunted if coffee industry is damaged • Shrinking amounts of arable land and high population pressure will generate stress on the political environment and may produce serious conflicts over resources

Climate Change Friendly Technology: Adaptation and Mitigation

A controversial issue regarding effects of climate change deals with the transfer of technology. Many are concerned that patents will prevent developing nations from acquiring new technologies to adapt to climate change. These patents allow companies to recoup money spent in research and development but do not allow LDCs to benefit from new discoveries. Eliminating these patents would decrease the incentive for companies to invest in technology that is of potential benefit to LDCs. On the other hand, if patents are indeed in place, prices will be too high for most countries to afford new technology. Reduction of tariffs or their complete removal could increase LDC access to such technology. Trade liberalisation of climate change friendly goods is seen as a way to increase local participation in small and medium sized enterprises (SMEs) in global supply chains, which will eventually lead to more employment and fewer cases of poverty. The cost of adaptation for Africa is estimated to be between 5-10 percent of its gross domestic product (GDP). In addition to finding a resolution to the patent issue, technical assistance must be provided to Africa.

Climate Change and Trade

The WTO and UNEP report states that 21.5 percent of carbon dioxide emissions result from international trade. Imported products can be characterised by the number of food miles, i.e. how far the food has travelled. However, this does not effectively measure how much carbon dioxide has been emitted in the related production and distribution process. Rather the outcome is a decrease in aggregate world trade associated with a sub-optimal penalisation of trade in specific items. For instance, green products associated with relatively high

food mileage might be penalised whereas dirtily produced products consumed close to the production source might escape penalisation. An alternative measure is to tax certain forms of international transportation that produce high levels of carbon dioxide emissions. This would provide an incentive for the use of more environmentally friendly international transport.

Global warming will change the comparative advantages that countries have. Northern countries, such as Canada and Norway are likely to benefit from global warming by the warming of icy lands thus, gaining more fertile and hospitable land. However, countries near the equator are likely to suffer from droughts and the loss of fertile croplands. Farmers will have to quickly adapt to new conditions and decide what crops they should produce. Many farmers may decide to stick with what they have been doing even if it means experiencing many failed crop batches. For instance, Uganda and Kenya are both highly dependent on tea and coffee as cash crops. Both of these countries receive a lot of revenue from these two crops and would be devastated if they could no longer produce either. If both economies end up completely abandoning the coffee and tea industries the transition costs would be enormous. These transition costs would include money lost from failed coffee and tea crops and the start up costs for new crops.

However, it is important to note that climate change might also have a positive influence on international trade as captured in box 1.

The Way Forward: Reducing Emissions

The global approach for phasing out Hydrochlorofluorocarbons (HCFCs) was successful but the cost of doing so was a small fraction

Box 1: Opportunities for Trade Arising from Global Climate Change

International trade can increase the available opportunities for adapting foreign technologies to local conditions:

- More Demand for Climate Friendly Goods – Due to temperature increase, the demand for goods that impact the environment favourably will greatly increase.
- Such Trade and Enhanced Production of Climate Change Friendly Goods – Will increase their availability and lower cost, which will benefit producers as well as consumers.
- Air Conditioning to Prevent Heatstroke – Although air conditioning will produce more carbon dioxide emissions, it may be an essential good for those in unbearable climates. This gives countries technologically advanced in this regard an opportunity to sell to others.
- Vector Control and Vaccination – Regions with advanced medical care facilities will have an opportunity to export more vaccines, medicines and medical services to affected areas which will also naturally benefit.
- Urban Planning to Reduce Heat Island Effects – Those countries of the world that have dealt with heat islands in major cities will have an opportunity to educate other newly exposed countries.
- Early Warning Systems for Natural Disasters Related to Climate Changes such as Hurricanes, Tsunamis, etc. – Knowledge and equipment transfer pertaining to these systems will benefit both the country that is selling its information to others as well as the vulnerable country by enhancing access to improved technology.

of what it will be for carbon dioxide because of the larger magnitude of associated emissions. This presents a huge challenge to developing countries and enhances the need for technical assistance.

One possible solution for reducing the amount of carbon emissions is to impose a carbon tax on consumers and producers. Or alternatively, emission permits can be issued – the polluter has to possess carbon credits for the amount of carbon dioxide it emits. It would be allotted a quota and any excess has to be made up through purchases from emitters with surplus endowments. Since

quotas would depend on both populations and desired rates of growth and industrialisation whereas actual emissions would be correlated with the level of industrialisation, most developing nations would have surpluses. Moreover, these surpluses can be enhanced, keeping gross emissions constant, if new carbon sinks are developed. Reforestation is an option in this regard. However, the problem of carbon leakage still remains – developed country companies might escape the stringency of carbon credit requirements by locating factories in developing countries with surplus carbon credits.

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