Country: Tonga

Committee: United Nations Economic and Social Commission for Asia and the Pacific

Comprised of 169 islands, 36 of which uninhabited, Tonga was a British protected state from 1900 to 1970, as the UK oversaw all foreign affairs. In 2010 the country converted to a constitutional monarchy. The struggling economy is highly dependent on remittance money from over half the population that resides abroad, primarily in Australia, New Zealand, and the United States. Tourism follows payment as the second-largest source of hard currency. However, agriculture and forestry provide the majority of employment, foreign exchange earnings, and food for Tongans. 43.1% of the limited 748 km2 is occupied agriculturally, 22.2% as arable land, and 15.3% for permanent crops. The GDP per capita in 2015 was $5,100, and the country suffered an annual trade deficit of $232.4 million. Major trade partners include Japan at 16% of exports and the US at 15.4%. 64.9% of the 106 513 inhabitants follow the Protestant religion which includes the Free Wesleyan Church, Free Church of Tonga, and Church of Tonga. Tongan is the official language, along with English. Tonga's foreign policy as of January 2009 has revolved around "Looking East" in establishing closer diplomatic and economic relations with Asia and retaining cordial relations with the United States. Although Tonga remains on good terms with the United Kingdom, they do not maintain particularly close ties. Tonga's relations with Oceania's regional powers, Australia and New Zealand, are good as they maintain strong local relations in the Pacific. It is a full member of the Pacific Islands Forum, the South Pacific Applied Geoscience Commission, the South Pacific Tourism Organisation, the Pacific Regional Environment Programme, and the Secretariat of the Pacific Community. In July 2007, Tonga became a full member of the WTO.

Unlike many other Asian nations, Tonga has successfully begun implementing tailor-made policies to improve infrastructure and power its remote islands in a sustainable way without turning to expensive grid-extensions. Many islands lack basic electricity supply, coming entirely from imported diesel. Given the decreasing reliability of fossil-fuel power generation, its increasing costs, and negative environmental side-effects, renewable energy solutions have attracted the government's attention. Together with the International Renewable Energy Agency, Tonga has charted out a renewable energy based strategy to power the main and outer islands alike. The approach focuses on Solar Home Systems that turn individual households into small power plants. Also, it calls for the involvement of local operators, finance institutions and technicians to provide sustainable business models as well as strategies to ensure the efficient operation, management, and maintenance once these systems are installed. The Philippines' economy has grown very sharply in recent years, and infrastructure spending must respond to economic growth to support further development. Infrastructure investment in Malaysia rose from $6 bn to $16 bn between 2005 and 2013 yet must continue to grow at least 9% a year between now and 2025 to remain consistent with other countries in the region. In Thailand, there is a positive outlook for the increase in infrastructure investment which is expected to reach $58.5 bn by 2025. Thailand's share of total global spending will rise shortly due to the projected high-speed rail project, but will be broadly stable over the longer term. Countries in Southeast Asia have experienced significant economic growth in comparison to many developing regions. As the economy grows each country shares the common issue of declining birth rates, shrinking workforces, and an increased necessity for technological advancement.

Infrastructure has not maintained pace with the booming economy, restricting further growth. Investor confidence has been deteriorated since the Asian Financial crisis of 1997. As well, there has been limited commitment and progress toward the current infrastructural projects. Toga has an issue opposite to most other nations; the economy is not growing at a rate which can facilitate an amelioration in infrastructure. Improving the tourism industry will be an essential factor in generating the funds and need for infrastructure.

The future of food in Asia is in peril. In order to satisfy the demands of The Sustainable Development Goals (SDGs) adopted in September 2015, Genetically Modified Crops are the only solution. For example, goal number 6, involving the reduction of water use, can easily be solved through genetic modification. Researches have managed to decrease the water requirement of the staple cereal crops by selection for traits that increase the rate of photosynthesis and depth of root structure, as well as decrease the rate at which water is lost through transpiration. This has the potential to reduce the amount of global water resources required in food production. In response to goal number 7, energy use, more crops are likely to be diverted for use as biofuels, doubling or even tripling as a proportion of total use. Even this challenge can be resolved through genetic modification. Germplasm improvements from traditional breeding have contributed to steady increases in yield. Marker-assisted breeding has nearly doubled the rate of yield gain when compared to traditional breeding alone. As well, GM traits, such as insect and herbicide tolerance, help to increase yields by protecting the crops that would otherwise be lost due to insects or weeds. In the Philippines for example, herbicide tolerant corn has increased the average yield by 15%, and up to 24% with insect resistant corn. Finally, goal number 13 which focuses on the reduction of greenhouse gasses to combat climate and goal number 15, minimizing the impact of agriculture on natural habitats, could both be solved through breakthroughs in biotechnology. Nitrogen oxide levels in fertilizer, a major contributor to the eutrophication process which results in horrendous deterioration to ecosystems, has been solved by Canadian Scientists in 2009 who successfully developed genetically modified rice plants that take-up and metabolise nitrogen more efficiently, thereby reducing the need for nitrogen fertilizers. The international community must make a commitment to invest in leading research companies like Monsanto to further progress our knowledge and capabilities of genetic engineering to make the future of food in Asia sustainable and secure. The future of food in Asia is in peril. To satisfy the demands of The Sustainable Development

Goals (SDGs) adopted in September 2015, Genetically Modified Crops are the only solution. For example, goal number 6, involving the reduction of water use, can easily be solved through genetic modification. Researchers have managed to decrease the water requirement of the staple cereal crops by selection for traits that increase the rate of photosynthesis and depth of root structure, as well as reduce the rate at which water is lost through transpiration. This has the potential to lessen the amount of global water resources required in food production. In response to goal number 7, energy use, more crops are likely to be diverted for use as biofuels, doubling or even tripling as a proportion of total use. Even this challenge can be resolved through genetic modification. Germplasm improvements from traditional breeding have contributed to steady increases in yield. Marker-assisted breeding has nearly doubled the rate of yield gain when compared to conventional breeding alone. As well, GM traits, such as insect and herbicide tolerance, help to increase yields by protecting the crops that would otherwise be lost due to insects or weeds.

In the Philippines for example, herbicide tolerant corn has increased the average yield by 15%, and up to 24% with insect resistant corn. Finally, goal number 13 which focuses on the reduction of greenhouse gasses to combat climate and goal number 15, minimizing the impact of agriculture on natural habitats, could both be solved through breakthroughs in biotechnology. Nitrogen oxide levels in fertilizer, a major contributor to the eutrophication process which results in horrendous deterioration to ecosystems, has been addressed by Canadian Scientists in 2009 who successfully developed genetically modified rice plants that take up and metabolize nitrogen more efficiently, thereby reducing the need for nitrogen fertilizers. The international community must make a commitment to invest in leading research companies like Monsanto to further progress our knowledge and capabilities of genetic engineering to make the future of food in Asia sustainable and secure.