PMUN 2014



(United Nations Environment Programme)

Study Guide

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Letter from the Chairs

Dear Delegates,

Study guides, as the name suggests, should only be used by a student to “guide” their research and brief them about the specifics of a topic. It should, by no means, be used as a primary source of information for ANYTHING, let alone the topics that you’re going to discuss at the MUN.

However, remember this:

* The Guide is love
* The Guide is life

Do make good use of the guide, as it will help you achieve things you only dreamed of. The guide is your source of inspiration, your only friend, and most importantly, physical evidence that your chair and co-chair have been working their asses off on putting together, so that you have a good PMUN 2014.

If you are reading this guide – good for you.

If you aren’t – then, as much as we hate (nah) to say it, we hope you die painfully.

In the coming week of the treacherous toil to PMUN, you must understand that preparation is absolutely necessary if you want to prove your country’s stance rightfully, and resolve a major world crisis the same way that it would be done in the United Nations.

One last piece of advice: *Always* be prepared to justify your country’s stance, irrespective of the grit and gravel you might often find yourself trapped in. And be reasonable (*please*).

As chair and co-chair, we will be looking out for those who can come up with viable solutions that may or may not be in-collaboration with other countries, but are viable nonetheless. :P

***May the votes be ever in your favour.***

Regards,
Your chair and co-chair.

P.S: Check out the website that the logistics team has been working really hard on, once again, only for your guys ☺ : [podarmun2014.wix.com/home](http://podarmun2014.wix.com/home)

Know Your Chairs

I love books. I stumbled upon my love for math after Grade 8. Dogs are awesome. I can go on pen doodling sprees for hours at a stretch. I have a passion for singing and drumming, and any kind of puzzle fascinates me.
(I’m also the nicer twin)

~Shambhavi Upadhyaya
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I am a 17 year old who believes in aliens. My first pair of drumsticks and my computer are my two most prized possessions. I believe that cake and thai food are the answers to every single question in life. I believe in spreading love <3 Also, System of a down is religion.

~Nishant Ahuja
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About the Committee

*Mission*

*"To provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and people to improve their quality of life without compromising that of future generations."*

The United Nations Environment Programme was
established in 1972, with an aim to promote sustainable
development of the global environment.

Its activities cover a wide range of issues
regarding the [atmosphere](http://en.wikipedia.org/wiki/Earth%27s_atmosphere), marine and terrestrial
[ecosystems](http://en.wikipedia.org/wiki/Ecosystem), environmental governance and green
economy. It promotes international science and
information, and plays a significant role in determining
new international policies and conventions for the
welfare of the environment.

UNEP's main activities are related to

* climate change;
* disasters and conflicts;
* ecosystem management;
* environmental governance;
* environment under review;
* harmful substances;
* resource efficiency.

Agenda One (Energy Resources and Future Energy Demands)

Energy resources comprise two types: renewable and non-renewable. While the air, the sun, water, biomass and hydrogen are renewable, coal, oil, natural gases and nuclear reactors are non-renewable.

What are the advantages using renewable energy resources?
Renewable energy resources allow for the generation of sustainable jobs, such as green harvesters and decentralised power stations. Furthermore, drawing energy from renewable resources uses much cleaner technology as opposed to non-renewable resources. In addition to assuring energy security, and a security of supply that is independent of price fluctuations, one of the major advantages of using renewable energy resources is that there is comparatively less reliance on other nations in terms of source supply and distribution. What’s more, the use of such energy resources directly promotes environmental sustainability and protection.

However, renewable energy resources could initially prove to be expensive, in terms of both costs as well as space. And while they produce a great deal of energy, wind energy, for instance, could prove to be intermittent.

The balance between energy consumption and the growing needs of economies gives rise to energy sustainability. It deals with environmental protection and taking social responsibility, also considering current energy needs without compromising needs of the future. Energy sustainability also refers to the ability of the environment to cope with waste products, especially [air pollution](http://en.wikipedia.org/wiki/Air_pollution). With global demand for energy growing, the need to adopt various energy sources is growing.

More than 85% of the world’s current energy needs are met through fossil fuels such as coal, oil and natural gas. Demand for energy is projected to increase primarily in developing countries that are beginning to drive more cars and use more electricity. Energy resources are expected to rise dramatically over the next twenty five years.

Some statistics:

* Global demand for all energy sources is forecast to grow by 57 percent over the next 25 years.
* U.S. demand for all types of energy is expected to increase by 31 percent within 25 years.
* By 2030, 56 percent of the world’s energy use will be in Asia.
* Electricity demand in the United States will grow by at least 40 percent by 2032.
* New power generation equal to nearly 300 (1,000MW) power plants will be needed to meet electricity demand by 2030.
* Currently, 50 percent of U.S. electrical generation relies on coal, a fossil fuel; while 85 percent of U.S. greenhouse gas emissions result from energy-consuming activities supported by fossil fuels.

Energy investment is almost always required when generating energy production, more so when dealing with non-renewable energy resource. Fossil fuel resources need to be extracted, then converted, resulting in higher energy investments. Generally, when investment is greater than the energy produced, then it is no longer an effective energy source. Therefore, wasteful energy resources are not used effectively in energy production.

Total investment in renewable power and fuels (excluding large hydro-electric projects) fell for the second year running in 2013, reaching $214 billion worldwide, about 14% lower than in 2012 and 23% below the 2011 record. The decline reflected a sharp fall in solar system prices, and the effect of policy uncertainty in many countries. Investment in fossil fuels fell in 2013.

More on world energy demand:

 **Are there organizations that help tackle issues related to global energy demands? Of course!**

**Organization for Economic Cooperation and Development (OECD)**An international organization helping governments tackle the economic, social and governance challenges of a globalized economy. 30 countries are members of the organization. With active relationships with some 70 other countries, non-governmental organizations (NGOs) and civil society, it has a global reach.

Clearly, non-OECD countries have drastically higher projected energy consumption. OECD countries, on the other hand, have a seemingly stable projection over the next thirty five years. This is because, in non-OECD countries, faster growing economies and rapidly changing habits in highly concentrated populations drive significant increases in energy use.

**The International Sustainable Energy Organization (ISEO)**

The ISEO is associated with several bodies of the United Nations. It aims to assist responsible officials and agencies for the establishment of complete energy statistics, and develop an effective energy costing & forecasting method for the faster implementation of hydro power, wind power, geothermal power, solar power, ocean power, clean fuel production, storage and applications, heat pumps, and sustainable transport and agriculture (road, off-road, rail, water, air).
It also aims to improve efficiency measures in aspects such as insulation, lighting, vehicles, household appliances, and promotes education, human behaviour and awareness creation.

A look at individual countries...

**New Zealand**

The New Zealand Energy Strategy, along with the New Zealand Energy Efficiency and Conservation Strategy, will take sustainability to new levels, by introducing initiatives that use renewable energy across power generation and transport, energy efficiency at home and at work, and the development and deployment of sustainable energy technologies.

The government has set a target for 90 per cent of electricity to be generated from renewable sources by 2025. Increasing the proportion of renewable electricity is an affordable option for New Zealand; it uses current technology and resources that are best for sustainability.

The local government has a significant role in providing community leadership, long-term investment planning and implementing building, resource management, and transport legislation.

To increase awareness of the issues and opportunities relating to energy supply and renewable energy, the Government is providing consumers and industries with information on the available technologies and advantages of bio fuels, distributed generation and marine energy. It is also providing funds for the development of renewable technologies.

**United States**

Policies include:
**Energy Diplomacy:** To manage the geopolitics of today’s energy economy through reinvigorated energy diplomacy with major producers and consumers.

**Energy Transformation:** To stimulate the market forces that will sustain transformational energy policies in terms of alternative energy, electricity, development, and reconstruction.

**Energy Transparency and Access:** To expand good governance, increase transparency, and improve commercially viable and environmentally sustainable access to the 1.3 billion people without energy services

**United Kingdom**

Government policy is to reduce GHG emissions by 80% by 2050 from 1990 levels. The only legally required milestones are that 15% of our energy is derived from renewable energy sources by 2020 and that the carbon budgets set by the Committee on Climate Change is met. Given that there are many technological pathways able to achieve the low carbon objective; the choice of pathway to follow is really one about the sort of society that is preferred. Energy policy becomes a reflection of the sort of society that is wanted, including whether it is acceptable that the UK has large numbers of fuel poor; whether the UK should act as a responsible global nation/friend; if there is concern about the environment; and what the balance is between the environment and security.

**India**

Policies to:

* Promote Indian tribal energy development, efficiency, and use
* Reduce or stabilize energy costs
* Enhance and strengthen Indian tribal energy and economic infrastructure relating to natural resource development and electrification
* Bring electrical power and service to Indian land and the homes of tribal members.

**Brazil**

Brazil is the 10th largest [energy](http://en.wikipedia.org/wiki/Energy) consumer in the world and the largest in [South America](http://en.wikipedia.org/wiki/South_America). At the same time, it is an important [oil](http://en.wikipedia.org/wiki/Petroleum) and [gas](http://en.wikipedia.org/wiki/Natural_gas%22%20%5Co%20%22Natural%20gas)producer in the region and the world's second largest [ethanol fuel](http://en.wikipedia.org/wiki/Ethanol_fuel) producer. Brazil is dependent on oil and hydroelectric power for the majority of its energy, but the country is now taking steps towards diversifying its energy mix in a way that reduces the chance of widespread power cuts due to drought, while also helping to meet emissions reductions targets. However, a history of talking without acting means that it is yet to be seen whether Brazil is serious about wind. The Brazilian Ministry of Mines and Energy recently announced changes to the country’s energy policy that it hopes will encourage the growth of the nation’s wind power industry, by opening up the unregulated energy market to wind power producers.

**Russia**

A number of policies aimed at modernising the energy sector and increasing its efficiency and sustainability are being developed or implemented, further reforms are needed. In 2014, Russia is preparing a new Energy Strategy to 2035 – offering a timely look at these challenges and opportunities. This review analyses the energy policy challenges facing Russia and provides critiques and recommendations for further policy improvements. It is intended to help guide the country towards a more sustainable energy future.

**Cuba**

**Cuban environmentalists hope to promote renewable energy on the island, in bid to reduce Cuba’s dependency on fossil fuels such as oil which often have to be imported from Venezuela.** Cuba currently gets some 95% of its electricity from fossil fuels, namely oil, and has historically relied on imports from other countries. Around 90% of renewable energy production (which in itself still only accounts for 5% of all energy) in Cuba comes from biomass resulting from the sugar industry, and this source alone is insufficient to drive Cuba’s renewables sector into the future, according to Cubasolar’s vice-president Julio Torres. Cuba’s stakes in helping to avert catastrophic climate change fuelled by the burning of fossil fuels and release of greenhouse gases, the time is ripe for a meaningful development of alternative energy sources in Cuba.

**The UAE**

 The UAE seems positively progressive on clean energy. At the Future of Energy Summit, UAE leaders announced a partnership with Denmark, and with Vestas Wind in particular, to tackle energy poverty in the developing world. The Wind for Prosperity project will offer carbon-free electricity to those who mostly use very expensive diesel generators for power. This partnership is only one example of the UAE's strategy to help bring about a clean economy future. One of the world's richest oil-based economies is embracing sustainable technologies, and making a surprise bid to become a clean energy leader. UAE has become a major player in clean technologies, funding large-scale [renewable energy](http://www.theguardian.com/environment/renewableenergy) projects around the world, and investing millions in fundamental research (in partnership with MIT) in energy, water, microelectronics, advanced materials, and transportation systems.

**Australia**

Policies to provide information on Australian Government policies and programs relating to energy. cover industrial energy efficiency, clean energy, energy markets, energy security, international engagement and energy facts, statistics and publications*.* Leading international agencies say Australia should become one of world leaders in renewables, arguing that the world could double renewable capacity by 2030, save money and slash emissions in the process.

**France**

France derives over 75% of its electricity from nuclear energy. This is due to a long-standing policy based on energy security.France is the world's largest net exporter of electricity due to its very low cost of generation, and gains over EUR 3 billion per year from this. France has been very active in developing nuclear technology. Reactors and fuel products and services are a major export. It is building its first Generation III reactor. About 17% of France's electricity is from recycled nuclear fuel.

**Denmark**

The long-term goal for Danish energy policy is clear: the entire energy supply – electricity, heating, industry and transport – is to be covered by renewable energy by 2050. In March 2012 a historic new Energy Agreement was reached in Denmark. The Agreement contains a wide range of ambitious initiatives, bringing Denmark a good step closer to the target of 100% renewable energy in the energy and transport sectors by 2050.
In many ways, Denmark has started the green transition well. However the Agreement moves us up a gear, with large investments up to 2020 in energy efficiency, renewable energy and the energy system. Results in 2020 include approximately 50% of electricity consumption supplied by wind power, and more than 35% of final energy consumption supplied from renewable energy sources.

**Japan**

Policies for:
Promoting energy conservation and efficiency measures
Ensuring a stable supply of oil
Development and introduction of diverse sources of energy
Basing the energy market on market principles

**Saudi Arabia**

Saudi Arabia announces to the world it’s embracing the goal of 100 percent green energy, most politicians in America are afraid to make such a bold statement out of fear of losing [shocking sums of money that the fossil fuel industry](http://ecowatch.org/2012/if-you-cant-beat-em-buy-em/) and wealthy individuals “donate” to sway elections and manipulate legislation, a force strangling our attempt to wean ourselves from dirty energy and embrace a clean energy future.

Prince Turki Al Faisal Al Saud of Saudi Arabia said, “I would like to see Saudi Arabia using 100 percent renewable energy within my lifetime.”

**Germany**

Germany rose to the challenge of such a project two years ago. Our goal is clear: we want to set our energy supply system on a new footing by the middle of the century. While around 80% of electricity currently comes from conventional sources, renewable energy should account for at least 80% electricity production 40years from now.

**China**

 China adopted the policy of reform and opening up in the late 1970s, its energy industry has made great advances. China is now the world's largest energy producer. It has built up a comprehensive energy supply system comprising coal, electricity, petroleum, natural gas, and new and renewable energy resources. Its universal energy service and civil energy use conditions have well improved.

**Switzerland**

 The aim of Switzerland’s energy policy and its national Energy Strategy 2050 is to guarantee the energy supply for the country as a whole. Expansion of the [hydropower](http://www.swissworld.org/en/economy/energy/renewable_energy/hydropower/) and[renewable energy](http://www.swissworld.org/en/economy/energy/renewable_energy/) sectors, coupled with more energy-efficient buildings, appliances and transport are essential, all the more so given the decision to phase out to nuclear power. Shortages or excessive demand will be covered by [fossil fuel-based electricity production](http://www.swissworld.org/en/economy/energy/fossil_fuels/)(combined heat and power plants, gas-fired combined cycle power plants) and imports.

**Canada**

 [Canada](http://en.wikipedia.org/wiki/Canada) is the 5th largest producer of energy in the world, producing about 6% of global energy supplies. It is the world's largest producer of natural [uranium](http://en.wikipedia.org/wiki/Uranium), producing one-third of global supply, and is also the world's leading producer of [hydro-electricity](http://en.wikipedia.org/wiki/Hydro-electricity), accounting for 13% of global production. It is also a significant producer of [petroleum](http://en.wikipedia.org/wiki/Petroleum), [natural gas](http://en.wikipedia.org/wiki/Natural_gas), and [coal](http://en.wikipedia.org/wiki/Coal). Only [Russia](http://en.wikipedia.org/wiki/Russia), the [People's Republic of China](http://en.wikipedia.org/wiki/People%27s_Republic_of_China), the [United States](http://en.wikipedia.org/wiki/United_States) and [Saudi Arabia](http://en.wikipedia.org/wiki/Saudi_Arabia) produce more total energy than Canada.

 **South Africa**

South Africa has abundant energy resources such as fossil fuels and gas. The resources provide the necessary infrastructural economic base as an attractive host for foreign investments in the energy sector. Biomass forms the main energy source in the rural domestic sector, while other renewable energy development opportunities are already being explored in the fields of solar power, wind power, pumped storage and in hydropower schemes.

**South Korea**

South Korea aims to generate 5% of energy from renewables by 2011, increasing to 11% by 2030. This is compared with a current figure of 2.4%, therefore achievement of these targets would more than double energy from renewables by the end of next year.South Korea already has FITs in place for wind and solar power; however, from 2012 these will be replaced by a Renewable Portfolio Standard (RPS), approved by the South Korean Assembly in March 2010.

**DPRK**

The limits of Turkey’s domestic energy sources in light of its growing energy demand have resulted in dependency on energy imports, primarily of oil and gas. At present, around 26 % of the total energy demand is being met by domestic resources, while the rest is being provided from a diversified portfolio of imports.

**Turkey**

The primary aim of Turkey is to realize its own energy security. To this end, Turkey aims to:

- diversify its energy supply routes and source countries,
- increase the share of renewables and include the nuclear in its energy mix,
- take significant steps to increase energy efficiency,
- contribute to Europe’s energy security.

Agenda Two (Food and Ecological Security)



Food security is at the top of the global agenda. Almost half a century of growth in food production notwithstanding, 1 in 7 people today receive insufficient protein and energy from their diets. With the world’s population and food consumption on the rise, the pressure on the food supply system is growing. Greater urbanization and income in countries in which meat consumption has traditionally been low have sparked an upsurge in demand for meat, putting more pressure on land. These trends in demographic dynamics and consumption patterns, combined with the threat of climate change and irreversible ecosystem service degradation, lead to increased uncertainty regarding current food production models.

The United Nations Secretary-General recently suggested that global food production needed to increase by half by 2030 to meet growing demand. Although in the longer term expanded demand and increased prices for agricultural commodities may represent an opportunity for agricultural and rural development, many constraints must be overcome if a significant supply response to changes in agricultural commodity prices is to be made without compromising but rather contributing to poverty alleviation and environmental sustainability.

The failure of supply to meet demand will result in higher food prices. Although this may benefit food producers, it will come at the detriment of consumers if income levels do not increase concomitantly. As societies are becoming progressively more urban in nature, food price hikes could lead to social and political instability, which would in turn hamper economic growth and development and efforts to alleviate poverty, especially because the poor food producers do not reap the benefits of any such price increases.

TL;DR? Okay: Food is important. People are consuming more and more food. Recent increases in food prices has caused worldwide concern on whether demand will gradually outgrow supply and will require a rapid expansion of food supply, and an increase in efficient production, storage and delivery of food products.

However, increased food production may include the intensification and expansion of agriculture through greater monocropping, intensive irrigation and use of transgenic crops, chemical fertilizers and pesticides. This puts pressure on cultivated ecosystems and, should the trend continue, will further degrade ecosystems’ ability to provide services to society. Ecosystem management will therefore be key to successful environmental management and food security, given the relationship between food production systems and the continuation of ecosystem service delivery.

The problem: Negative impacts of agriculture on various ecosystem services have often led to large societal costs that are increasingly being felt on human well-being, including, for example, declines in water quality for downstream residents affecting their health, and declines in wetlands and coastal ecosystems.

Example A:

Poorly designed and executed agricultural policies led to an irreversible change in the Aral Sea ecosystem. By 1998, the Aral Sea had lost more than 60% of its area and approximately 80% of its volume, and ecosystem related problems in the region now include excessive salt content of major rivers, contamination of agricultural products with agrochemicals, high levels of turbidity in major water sources, high levels of pesticides and phenols in surface waters, loss of soil fertility, extinctions of species, and destruction of commercial fisheries.

Example B (A more relatable one):

India province of Punjab is one of the fastest growing economies of the world, with 1.53% of natural geographical area of India, providing 55 - 65% of wheat and 35 - 40% of rice to the national pool annually. During the period from 1960 to 2008, the production of wheat has increased by nine times while rice production has gone up by forty eight times. This level of growth in food production had negative consequences in the agricultural ecosystem in Punjab state, as soil has become nutrient deficient, ground water table has gone down by a meter during 2003 – 2004, crop diversity has reduced and amounts of pollutants in soil as well as surface water have increased. The environmental crisis faced in Punjab, which may impact the sustainability of agricultural production deserves immediate national attention because of their increasing relative importance to national food security.

The solution: A trade-off. In order to satisfy both the objectives, that is, to increase production of food and to preserve the integrity of ecosystems, a trade-off can be made wherein at least one of these objectives are satisfied. The trade-off that is made must be carefully evaluated on the basis of:

* Spatial scale
* Temporal scale
* Reversibility

The UN along with various scientists also suggested various implications that should be taken into account when devising a method to tackle the above mentioned problems.

The World Summit on Food Security in 2009 also suggested the “The Five Rome Principles for Sustainable Global Food Security”, that was taken into effect immediately by all participating countries.

Again, TL;DR? Never mind.

**Here’s a summary:**

Much of the international food security debate centres around the different social and economic factors that affect availability and access to food. While these factors are certainly important, the debate largely overlooks another vital aspect of food security, namely its environmental dimensions. But scientists and experts now argue strongly that the environment should be front and centre in the debate.

* The world’s food production system -- agriculture, marine fisheries, in land fisheries – is underlain by an ecological foundation and we are undermining this foundation through land degradation, competition for land, overfishing, pollution, and in many other ways. By doing so we are threatening the long-term capability of the system to provide food.
* The solution lies in "sustainable food systems" which include a wide range of approaches from multi-use landscape management to minimizing food waste and improving the efficiency of the food value chain.

**As it is now:**

##

Currently, there are 1.4 billion people living in extreme poverty, including close to 925 million who suffer from hunger and more than 200 million children under five who suffer from malnutrition. In addition, micronutrient malnutrition, often referred to as “hidden hunger”, affects approximately two billion people worldwide—more than one-third of the global population. Close to 10 million children die before their fifth birthday every year as a consequence of malnutrition.

The food crisis of 2007-2008, followed by the financial and economic crisis in 2009, drew stark attention to the daily challenges faced by millions of families around the world in their attempt to overcome hunger and poverty and seek stable livelihoods that support a dignified way of life. Despite the efforts of many and the commitment of the international community in the Millennium Declaration to reduce by half the proportion of people who suffer from hunger by 2015, persistent hunger and malnutrition remains the norm for millions of human beings.

An estimated 60 percent increase in agricultural productivity—100 percent in developing countries—is necessary by 2050 if hunger and food insecurity are to be overcome. However, the world’s ecosystems, biodiversity and associated goods and services are also under increasing pressure from loss of crop diversity, over-exploitation of fish stocks, deforestation, degradation and losses of arable land and aquatic ecosystems, growing competition for increasingly scarce water, and the impacts of climate change. Responsible environmental stewardship as well as greater fairness in food management and distribution is important contributors to achieving universal food security and nutrition.

In order to deal with the above mentioned issues, a trade-off must be made between food production and ecological sustainability (Like opportunity cost, you know?). In the past, the UN has suggested multiple implications and strategies to devise “sustainable food systems”.

**Resolutions:**

***Five Rome Principles for Sustainable Global Food Security:*** Adopted at the World Food Summit in November 2009.

***Provisional Agenda: A/67/150*** examines the challenges of achieving food and nutrition security and provides an update on progress in implementing sustainable agricultural policies and practices in line with the Rome Principles.

***Resolution: A/RES/64/224*** emphasizes the urgent need to increase efforts at the national, regional and international levels to address food security and agriculture development as an integral part of the international development agenda.

***Resolution: A/RES/65/178*** Recalls the Declaration of the World Summit on Food Security,particularly the Five Rome Principles for Sustainable Global Food Security.

***Resolution: A/66/202*** Tackles the issues on Biological Diversity and sustainability of Ecosystems.

***Resolution: A/RES/66/220***  In effect, as of today. Recognizes and highlights the need for Food and Ecological security in the most affected countries as of today and in the near future. Decided to include agriculture development and food security as part of the provisional agenda at the 67th session.

A look at individual countries...

**USA**

The United States has joined with other countries, nongovernmental organizations, private companies and foundations to stop the vicious hunger cycle through a coordinated, global food security initiative. In 2010, the United States launched [Feed the Future](http://www.feedthefuture.gov/), a strategy and pathway for U.S. development assistance, technical support and investments to improve agricultural systems and food security, which, in 2014, will be augmented by a [Nutrition Strategy](http://www.usaid.gov/nutrition-strategy).

Overcoming the root causes of hunger, particularly in very poor communities, will take time. It is therefore crucial to continue robust levels of U.S. food assistance through the [Food for Peace](http://foodaid.org/food-aid-programs/food-for-peace/), [Food for Progress](http://foodaid.org/food-aid-programs/food-for-progress/) and [McGovern-Dole Food for Education](http://foodaid.org/food-aid-programs/food-for-education/) programs. Wholesome U.S. foods and commodities are provided to people and regions where food deficits and hunger are persistent problems. The food is accompanied by assistance to reduce childhood malnutrition, to improve agricultural productivity and incomes of the poor, and to build the capacity of communities to meet their own needs.

The United States is also working toward addressing climate change. It has initiated a number of polices and partnerships to reduce emissions at home, to develop low-carbon technologies, to improve observations systems that will help in understanding and addressing the possible impacts of climate change. Results are aimed to be recognized both domestically as well as internationally. The US believes it must work collaboratively with other nations to slow, stop, and reverse greenhouse gas (GHG) emissions in a way that promotes sustainable economic growth, increases energy security, and helps nations deliver greater prosperity for their people.

**UK**

Food security for the UK in peacetime has only recently been a subject of concern. Until 2008, the Labour Government justified financial support for farming as a means of obtaining environmental objectives. Even before the election in 2010, however, increasing concern over food security has encouraged renewed emphasis upon food production.

• The British Government has resisted the view that food security concerns should be met by increased subsidy for domestic – or indeed European – agriculture. Instead they have argued for freer international trade.

• However, the British Government has paid increasing attention to the role of domestic food production.

• Several reports have argued that food security problems would return unless appropriate action was taken.

• Food security is closely related to energy security and to the availability of fertilizers.

• The Foresight Report, January 2011 stresses the enormous scale of the problem.

Carbon Rationing Action Groups (CRAGs) and Transition Towns aim to make a difference toward climate change. Protection policies toward the ecology are being actively revised and implemented. The Climate Change Bill currently going through UK Parliament is calling for a 60% reduction in carbon emissions by 2050. However, to make a true change toward a lower carbon future and increased ecological security, 80% would be the ideal target.

**New Zealand**The current situation in New Zealand:

Everyone, regardless of income, has access to sufficient, safe, nutritious and affordable food that is produced and traded fairly. The food eaten is produced in ways that are ecologically and economically sustainable. Animals raised for food production are treated humanely and have the ability to express natural behaviour. The producers in the country are supported to ensure the country is self-sufficient in food. In terms of health and disease, it is a healthier nation without epidemics of obesity, type 2 diabetes or other food-related chronic health problems. It contributes to a world where everyone has enough to eat and food is produced equitably and sustainably. Local food production and healthy eating is promoted.
Working toward better ecological security as well, New Zealand has signed and ratified the Kyoto Protocol. It is also actively working with non-government organizations, political parties and other emission trading schemes. However, a report published in 2013 stated that New Zealand’s policies toward ecological security and climate change would create small if not insignificant changes. Carbon emissions would continue to grow, and could result in New Zealand losing its competitive edge in today’s world.

**Denmark**

Identified the need to harness components of the green economy to reduce hunger and malnutrition, as well as shift to the more sustainable use of natural resources.  Minister Bach noted the priority to stabilize the world food system and called for development assistance to dive deeper into policy support and help low-income countries develop and sequence priorities for action improving food and nutrition security. He also highlighted the need for an effective agricultural index and called on IFPRI to be a strong voice in the development of the “[Agricultural Transformation Index](http://um.dk/en/~/media/UM/English-site/Documents/Danida/Activities/TAS/Events/Agricultural%20Index/CopenhagenConsultationDraftReport_FINAL.ashx).” IFPRI colleagues participated in the index’s conceptualizing meeting in Copenhagen last June and look forward to providing further support as it develops.
Denmark currently has the fourth largest ecological footprint in the world. Independence from coal, oil and gas are the main goals of the Danish government. Ensuring energy security, by ensuring stable, affordable energy supply should contribute to limiting climate change.

**Germany**

Focuses on small farming and fisheries. Small farmers and their families re­ceive support to help them make the transition from purely subsistence farm­ing to producing a market­able surplus. Pro­duc­tiv­i­ty gains and income gen­er­a­tion in agri­cul­ture make it possible to create jobs out­side agri­cul­ture. Private in­vest­ment in agri­cul­ture should be stepped up and geared to de­vel­op­ment goals. In a growing num­ber of rural regions in the world, creating em­ploy­ment al­ter­na­tives to the cul­ti­va­tion of drug crops is in the interests of security. Lots of support measures are also focused on sustainability. The mea­sures go well beyond the con­fines of the agri­cul­tural sec­tor, and reaches out to institutional de­vel­op­ment and good governance. There is an aim to increase long-term agricultural production and development of rural areas. Moreover, there is an aim to retain the natural resources base, which includes fishing grounds, water, soil, climate and biodiversity. Only sus­tain­able land management will make it possible to feed a growing world pop­u­la­tion in future. This chal­lenge will be further compounded by the need to adapt agriculture to climate change.

**South Africa**

South Africa faces key food security challenges. It aims to to ensure that enough food is available to all, now and in the future; to match incomes of people to prices in order to ensure access to sufficient food for every citizen; to empower citizens to make optimal choices for nutritious and safe food; to ensure that there are adequate safety nets and food emergency management systems to provide people that are unable to meet their food needs from their own efforts; to mitigate the extreme impact of natural or other disasters on people; finally, to possess adequate and relevant information to ensure analysis, communication, monitoring, evaluation and reporting on the impact of food security programmes on the target population.
The real challenge is to integrate ecological, conservational, social, and economical issues into a sound management plan which incorporates the entire city, not only the natural areas with their unique biodiversity. While South Africa has many number of reserves, it needs to establish a more sound policy toward ecological security.

**South Korea**

 As part of its food security policy, South Korea has been pursuing food self-sufficiency using high tariffs and high administrative prices in key agricultural and food markets. Welfare costs are aimed to be kept at a minimum, so that producers are not discouraged to supply and distribute. Production targets in several farming sectors help to achieve better food security as well.
Eco-education, eco tourism and several other projects funded for, help in improving the country’s ecological security. By working with local farmers to restore riparian, grassland, ecological preserves, cultural sites and forest habitats, an ecological balance has been well maintained between humans and other animals, such as cranes. Reinforcing ecological support with Green IT and carbon taxes could help in aspects like climate change and environmental sustainability.

**Brazil**

Brazil plays an important role in both food production and trade. The expansion of its agricultural sector over the last few decades has guaranteed an increase in food supplies to its national market and, significantly, to the global commodities trade. Trade (internally and externally) is considered to affect at least three of the pillars of food security: availability, access and, thus, stability. When incentives are given to agricultural producers, trade might have a positive impact on food availability and access, as food production increases and prices decrease.
Brazil also has the richest biodiversity in the world. In order to sustain this, it should aim toward ecological sustainability. In 1981, the Brazilian government put into force the National Environmental Policy (NEP). Brazil has also signed and ratified the Kyoto Protocol, and has aimed to reduce carbon emissions as much as possible to promote ecological welfare as well as security.

**Australia**

Australia advocates a comprehensive approach to food security that targets the immediate needs of the poorest, while also strengthening the foundations of long-term global food security. It provides immediate humanitarian food assistance delivered through agencies such as the World Food Programme (WFP) and the UN Food and Agriculture Organization (FAO). Overseas development assistance including the Australian Centre for International Agricultural Research (ACIAR) helps improve agricultural productivity and reduce post-harvest losses. Aid program initiatives also broaden opportunities for agricultural business growth, trade and market access, and increase the ability of the poor to access food by increasing incomes and driving economic growth.
Biosecurity legislation, The Environment Protection and Biodiversity Conservation Act (1999) and the Tasmanian Forests Intergovernmental Agreement are acts that promote environmental resilience. Australia actively promotes ecological security through several governmental policies like sea dumping permits and biosecurity systems.

**China**

China's top policy priorities for 2014 will be improving the rural environment and maintaining food security, according to a key policy document published by the official Xinhua news agency on Sunday. However, hopes that Beijing would attain a longstanding 95-percent food self-sufficiency target and open the floodgates for more imports don’t seem absolutely possible. [China](http://www.reuters.com/places/china?lc=int_mb_1001) may continue to pursue basic grain self-sufficiency while increasing the use of overseas [markets](http://www.reuters.com/finance/markets?lc=int_mb_1001) and allowing an appropriate amount of imports, but it would not relax domestic food production at any time. Ecological security would only follow if pollution levels can be brought down, or maintained. There are, however, several programmes that would help achieve this.

**Russia**

The debate over food security in the Russian Federation over the past ten years has been over agricultural policy. Reforms in the Russian economy have caused changes in agricultural production. There have been two quite important changes in production in the country since policy reforms started in 1992: a sizeable fall in livestock inventories and a corresponding fall in production of feed grain. Accompanying these changes has been a sizeable fall in imports of grain and an increase in that of meat. On one side, the agricultural establishment has interpreted these changes as an ongoing “crisis” in the agricultural sector that threatens the food security of the country. On the other side of the debate, a number of economists have pointed out that changes in food production have been caused by an adjustment in consumer purchases. Russia therefore has a comparative advantage in terms of crop production rather than livestock products.
Russia faces several ecological problems such as hazardous waste disposal, nutrition contamination and access to clean water. However, it does have an extensive bureaucracy that deals with ensuring ecological security. Examples include: The Ministry of Natural Resources, The State Committee for Environmental Protection, and The Commission on Ecological Security.

**UAE**

The UAE is working to reduce waste, improve water conservation and farming techniques, and manage more the increasing demand for food and water more sustainably, being stimulated by the country’s ongoing development. The UAE is achieving this by investing in technology, implementing agricultural reform policies, developing infrastructure, diversifying suppliers and most importantly, introducing innovative conservation and education initiatives.Food and water security are key priorities for the UAE in both domestic and foreign policy and represent a major area of interest on the G20 agenda.

**Turkey**

Turkey is one of only seven countries in the world which is completely food secure and does not essentially need to import any food. Turkey is now Europe s main provider of organic produce. Much of this is done in tunnels, using organic practices, and the crops are grown in the ground but protected from the elements. Turkey has also been a member of the FAO since 1948, which has helped its technical food capacity to grow over the years. Turkey made important contributions to the efforts aiming at strengthening global food security, and strongly supported the work of the FAO.Investing in bio capacity, promoting biological diversity, effective land allocation and valuing ecosystem services, increasing renewable resources and energy efficiency will help boost Turkey’s situation in ecological security.

**DPRK**

North Korea faces major food crisis.  A report estimated a total 2012/13 crop of 5.8 million tons from collective farms, individual plots, and household gardens, with staple food production up about ten percent from the previous year. Acute malnutrition rates seem to have decreased, however. food production increased despite a dry spell and several instances of flooding over the agricultural season, with the impact of the dry spell partially staved off by increased irrigation efforts. The FAO and WFP recommended that the international community continue to address the prevention of malnutrition in North Korea by providing nutritional support to vulnerable groups and promoting the production of protein sources. The report also recommended that North Korea improve its incentives for agricultural production and provide support for household food production. North Korea’s ecology, however, is highly vulnerable. Massive deforestation and droughts in the 90s have left the country severed. The nation needs to find ways to support their environment, and create informed policies regarding sustainability and development. Environmental expertise needs to be acquired to work to ecological security.

**India**

The National Food Security Act and The Essential Commodities Act are policies aimed at improving food security within the nation. They look at providing subsidised food grains to households in rural areas, and ensuring the access of commodities like wheat, cotton, jute, etc. that would otherwise be hoarded or supplied in the black market. State schemes and other policies are aimed at achieving food security as well. The Supreme Court of India has been proactive in engaging with issues relating to the environment. The huge number of reserves and national parks has greatly maintained its position in the ecological level. India might need to revise or redraft bills to ensure further sustainability, and progress toward a more protected future, keeping in mind its rapid development and industrialisation.

**Canada**

The Canadian International Food Security research, Food Secure Canada, and Canadian Seed Security work towards ensuring self-sufficiency in terms of food and its production. Canada actively funds programmes that help in planning for sustainable and secure areas in the country. Identifying synergy and scope for agricultural development should be aimed for.
Canada National Parks Act aims toward environmental integrity. Ecological security is not a major problem face by Canada; however, policies created must be implemented as well.

**Japan**

Japan faces a major food security crisis. The government says only 39% of the food the Japanese need is grown in Japan. 80% of the public is also majorly worried about the current situation in Japan. Food security net programmes, trade policies and financial aid toward farmers are some of the several actions that should be considered in order to improve the country’s position. Japan, also being one of the few rapidly industrialising nations, needs to carefully assess its country’s environmental position. The massive destruction caused by the catastrophic earthquake has led to several disastrous consequences. NGOs, world-class research institutes and Local Governments for Sustainability have provided their efforts in identifying biological hotspots and restoring lost biodiversity.

**Cuba**

Cuba, with a population of a little over 11 million people, imports about 80% of its domestic food requirements. A number of measures are being taken to increase food production, chief among which is the allocation of fallow land to private individuals and groups, as well as the reduction of the amount of land devoted to sugar cane cultivation, but the country’s vulnerability to hurricanes and droughts, coupled with the increase in global food prices and the financial crisis, makes the path to national food security difficult. However, Cuba’s achievements in urban agriculture are truly remarkable—there are 383,000 urban farms, covering 50,000 hectares of otherwise unused land and producing more than 1.5 million tons of vegetables. Much of Cuba’s ecology is formed by its agriculture. Ensuring food supply would therefore mean ensuring ecological security.

**Saudi Arabia**

Saudi Arabia is seeking to play a significant role in raising food security in the Middle East and across the world. The latest initiative comes after Riyadh has secured a high level of domestic food security. Director of the King Abdullah Initiative for Saudi Agricultural Investment Abroad, Saad Khalil, said that Saudi Arabia will seek to invest in 35 countries across the world. The second phase involved establishing the Saudi Company for Agricultural Investment and Animal Production (SCAIAP) and implementing the decisions of the cabinet to approve agricultural loans granted by the fund. For a country largely composed of desert, Saudi Arabia has fairly rich biodiversity. Not only is demand for electricity growing in Saudi Arabia, but the country is dependent upon energy-intensive desalination plants for most of its fresh water — plants which currently consume millions of barrels of oil daily. On the scale now envisioned, solar would reduce national consumption by more than a half-million barrels per day. Saudi Arabia also announced a $100 billion investment in renewable energy.
Not only is demand for electricity growing in Saudi Arabia, but the country is dependent upon energy-intensive desalination plants for most of its fresh water — plants which currently consume millions of barrels of oil daily. Improving ecological security should also mean more employment generated in such areas.

**Switzerland**

# Switzerland will continue efforts to improve food security and defeat hunger around the world. According to Martin Dahinden, director of the Swiss Agency for Development and Cooperation (SDC), Switzerland is one of the few countries not to have reduced its agricultural aid to developing countries in recent years, with around SFr200 million ($194 million) spent annually. When concerning sustainability, Switzerland ranks the world-best. It is supreme in terms of ecological security. Switzerland’s international environmental policy can be characterised as a pro-active, ambitious but solution-oriented engagement. Strengthening international environmental governance, climate change, biodiversity, and chemicals and waste management are the main priorities. The Federal Office for the Environment (FOEN), has helped Switzerland play an active and effective role in international environmental policymaking.

**France**

M. Stéphane Le Foll, Minister of Agriculture, the Food Industry and Forestry, set out at the FAO Conference three areas of action in France’s commitment to world food security:

- combating agricultural commodity price volatility, with the AMIS initiative, which allows us to get a better understanding of crops and reserves at global level and the establishment of prepositioned food reserves in the developing countries;

- battling food waste in every country of the world, both in terms of post-harvest losses in the agricultural sector and losses at distribution and consumer level;

- developing agro-ecology in France, Europe and the world, with the aim of doubling agriculture’s economic and environmental performance.

France ranks better than most countries in terms of ecological security; it has more energy-efficient urban development. However, more specific to the forest environment, attention must be paid to the several wild species that are becoming endangered, and to activities such as hunting.

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