

# A LEGAL ANALYSIS ON FOOD SECURITY UNDER INTERNATIONAL ENVIRONMENTAL LAW

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## **Abstract**

*Food security is a global issue and a concern of the international community . Food security is related to many aspects, such as economic, social , cultural , and environmental . Linkages with food security and environmental sustainability are closely inseparable . Balanced environment will help achieve sustainable food security . On the other hand , efforts to achieve food security must be environmentally sustainable . International environmental law governing food security in several instruments both “ hard law” or “ soft law “ . Implementation of the present international environmental law can help to achieve sustainable food security.*

**Keywords :** Food Security, Agriculture, International Environmental Law.

## **Abstrak**

*Ketahanan pangan merupakan permasalahan global dan menjadi perhatian masyarakat internasional. Ketahanan pangan terkait dengan banyak aspek di dalamnya, seperti ekonomi, sosial, budaya, dan lingkungan. Keterkaitan ketahanan pangan dengan kelestarian lingkungan sangat erat dan tidak terpisahkan. Lingkungan yang seimbang akan membantu tercapainya ketahanan pangan yang lestari. Di lain pihak, upaya pencapaian ketahanan pangan harus memperhatikan kelestarian lingkungan. Hukum lingkungan internasional mengatur tentang ketahanan pangan dalam beberapa instrumen baik yang bersifat “hard law” maupun “soft law”. Pengimplementasian hukum lingkungan internasional dapat membantu tercapainya ketahanan pangan yang lestari.*

**Kata kunci :** Ketahanan Pangan , Pertanian , Hukum Lingkungan Internasional

## **A. Introduction**

At the beginning of the 21<sup>st</sup> century, poverty was on the increase in many parts of the world and at the same time the degradation of the environment and the depletion of natural resources also continued. Within the next decade, the world will face a worse situation. When the environment becomes less valuable or damaged, environmental degradation is said to occur. There are many forms of environmental degradation. When habitats are destroyed, biodiversity is lost, or natural resources are depleted, the environment is hurt. Environmental degradation can occur naturally, or through human processes. The largest areas of concern at present are the loss of

rain forests, air pollution and smog, ozone depletion, and the destruction of the marine environment. Pollution is occurring all over the world and poisoning the planet's oceans. Even in remote areas, the effects of marine degradation are obvious. In some areas, the natural environment has been exposed to hazardous waste. In other places, major disasters such as oil spills have ruined the local environment.

Environmental degradation will cause aggravation effect to human beings and create insecurity. The concept of human security has been change at the last decades. Before, threats always related to external threats. As a result, state security focused on the national security. Globalization in the

last decades of the 20<sup>th</sup> century changed the concept of human security to “internal threats”. Human security has become more global and the focus has changed to humans themselves, not states. Issues like environmental degradation, poverty and hunger, and endemics like HIV/AIDS, are recognized as major threats to humans. The target of human security is to ensure the basic needs of humans and to enhance the quality of the environment<sup>1</sup>. Environmental degradation is a result of the dynamic inters play of socio-economic, institutional and technological activities. Environmental changes may be driven by many factors including economic growth, population growth, urbanization, intensification of agriculture, rising energy use and transportation. Poverty still remains a problem at the root of several environmental problems.

The rapid growth of world population is one factor that has created global problems. Large numbers of people around the world create social, economic and environmental problems. Technology and the increase in the number of industries also make these problems worse. Recently, environmental problems have affected almost all parts of the world. The environmental problems here refer to problems occurring transnational, creating a negative situation globally. Many environmental issues have become major topics of discussion in the international community. These show that people around the world are concerned about these issues, and, more importantly, they understand that we will face some threats within the next few years. The fact is, what considered as threats are not threats anymore, because they are happening now. Environmental problems become mutual consideration among states, then will creates mutual responsibility among them.

Environmental degradation and population growth could trigger a global food crisis in the next half century as countries struggle to find fertile land

to grow crops and rear animals. To keep up with this population growth, more food will have to be produced in the next 50 years than has been produced over the past 10,000 years combined. In many countries however, a combination of poor farming practices and deforestation has been worsen by climate change will generate a degradation of soil fertility and leaving vast areas unsuitable for crops or grazing<sup>2</sup> Food is essential for human beings. Same as air and water, human beings could not live without food, then it make food as a basic right for every human. A food crisis, defined as a widespread shortage of food, is usually followed by malnutrition. In many countries, a food crisis is no longer a threat as it has become a reality, for example in African countries like Djibouti, Somalia, Kenya and Ethiopia. In the FAO news release January 2006, it was estimated that more than 11 million people in those countries will suffer as a result of famine. A food crisis could also be caused by the loss of biological diversity. The loss of biological diversity is one of the most important results of global warming. Food crisis is only can overcome by food security.

According to the UN's Food and Agriculture Program, 854 million people do not have sufficient food for an active and healthy life. Those people currently face hunger and malnutrition. Some 815 million of them live in economically developing countries, 76% in rural area. All available data and studies show that the number of hungry and malnourished people has increased in the last decade, even though enough food is produced globally to satisfy the needs of the world's population. Hunger and malnutrition today are not caused by food shortage, or scarcity: hunger is an issue of access to food, to an adequate income, or to productive resources that allow poor people to either produce or buy enough food. The inequitable distribution of food, land, and other productive resources are the main causes of hunger and malnutrition<sup>3</sup>. This article will discuss about food security under international environmental law and how is food security connected to the environmental protection. It will also discuss

<sup>1</sup> Loetan S, “Milenium Development Goals(MDG) Dan Program Pembangunan Nasional di Indonesia” ,in Indonesian Journal of International Law, Center for International Law Studies, Faculty of Law, Jakarta, University of Indonesia, Vol.1, No.1, Oct 2003.

<sup>2</sup> “Global Food Crisis Looms as Climate Change and Population Growth Strip Fertile Land”, [www.guardian.co.uk/ environment/2007](http://www.guardian.co.uk/environment/2007).

<sup>3</sup> Widhfur M, Jonsen J, 2005, *Food Sovereignty: Towards Democracy in Localized Food System*, ITDG publishing, the Schumacher Centre for Technology and Development, Warwickshire ,CV23 9QZ, UK.

on the role of international environmental law in food security.

## **B. The Legal Analysis**

### **1. The Nature of Food Security**

Elements of food security and food system are Food Utilization, Food Availability and Food Access. Food Utilization is about nutritional value, social value and food safety. Utilization of food has a socioeconomic and biological aspect. If sufficient and nutritious food is available and accessible, a household has to make decisions about what food is to be consumed and how the food is allocated within the household. Appropriate food intake (balanced and micronutrient-rich food) for young children and mothers is very important for nutritional status. Utilization requires not only an adequate diet, but also a healthy physical environment, including safe drinking water and adequate sanitary facilities (to avoid disease) as well as an understanding of proper health care, food preparation and storage processes. In addition, health-care capacity, behaviors, and practices are equally important. Food Availability consists of food production, distribution and exchange. Food availability is meant by the physical existence of food either from own production or from the market. At the national level, food availability derives from the combination of domestic food stocks, commercial food imports, food aid and domestic food production. Food Access is dealing with affordability, allocation and preference<sup>4</sup>. Access to food is ensured when all households and all individuals within those households have sufficient resources to obtain appropriate food for a nutritious diet.

The term food security is used as a general term globally. It is used in many international instruments such as conventions, treaties, protocols and agreements. In a simple way food security means enough food for people to eat, produced from a sustainable food system<sup>5</sup>. The Food and Agricultural Organization (FAO) of the United Nations, described food security as “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food

that meets their dietary needs and food preferences for an active and healthy life”.

From definition above it can be seen that sufficient of food does not automatically means food security, because the aspect not only about quantity but also quality. It should be a safe and nutritious food to meet people need and ensure their health. Another important aspect also in how we reach the food security. It mentioned above that it should be reached through sustainable food system. Sustainability need to be implemented on many levels. The term of sustainable development has dominated legal debates in the field of social and economic development and environment protection on the other side. Finally, in the report of the World Commission of Environment and Development (WCED) in 1987, known as “Our Common Future” or Brundtland Report, sustainable development described as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

### **2. The Interdependence of Food Security and Environmental Protection**

Quality of the environment will influence food security. Environmental degradation impacts quality and quantity of food. Food security can achieved through agricultural activities. However, some agricultural activities are potential to harm the environment. There are some threats to environment caused by agricultural practices, such as: soil degradation, problems in water supply and water quality, air pollution, misuse of chemicals and biological diversity problems. Overusing of chemical fertilizers can cause degradation of soil quality, water and air pollution. Pesticides in agriculture are also bring negative impact because it kills not only unwanted pests but also important organisms, so it will cause biological diversity problem.

### **3. Food Security under International Environmental Law**

International environmental law was formed because of the need to protect environment. At the

<sup>4</sup> Gregory P, *Food Security: Challenge to Science and Society*, public lecture, University of Nottingham, Malaysia, 29 July 2010

<sup>5</sup> Tansey G and Rajotte T, *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property, Biodiversity and Food Security*, Earthscan, UK, 2008, p 24.

end of 1960's following expression of scientific alarm, public consciousness became increasingly aware of the dangers threatening the earth<sup>6</sup>. Environmental protection is to be an integral part of the development process, and cannot be considered in isolation from it<sup>7</sup>. Moreover, peace, development, and environmental protection are interdependent and indivisible<sup>8</sup>. International environmental law challenges many fundamental concepts of traditional international law. It put new limits on State sovereignty, it intrudes into the domestic jurisdiction and territorial integrity of States, it creates greater responsibility for States, and it involves many non-States entities in the process of international law. The global nature of environment issues means that national action by itself, while important, may be insufficient, and that is why international cooperation is required<sup>9</sup>. Concern and awareness about the need for environmental protection has increased highly both in national and international level. One way of putting this concern into action is the law, being a means to structure and regulate behavior. International environmental law includes many treaties and declarations, a body of State practice and some compliance mechanisms<sup>10</sup>.

As mentioned above in previous part, food security closely related with the environmental protection. Here are major instruments of international environmental law related to food security which are:

- a. The FAO International Treaty on Plant Genetic Resources for Food and Agriculture, 2001.

The Treaty is of vital importance to plant genetic resources for food and agriculture (PGRFA) and ultimately for food security. Its importance lies in the fact that it allows for the continued flow of the PGRFA most critical to the world's food security and for which countries are most interdependent. The Treaty also provides a comprehensive framework for the conservation and sustainable use of all PGRFA. The Treaty establishes a Multilateral System of Access and Benefit-sharing for PGRFA of crops important for

food security as well as for the interdependence of countries on them.

- b. Convention on Wetlands of International Importance (Ramsar) 1971.

International protection for soil is recent, in spite of problems of soil degradation, erosion, flooding, and desertification. The agreement, which entered into force in 1975, now has nearly 100 parties. It required all countries to designate at least one protected wetland area, and it recognized the important role of wetlands in maintaining the ecological equilibrium. The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". The Convention uses a broad definition of the types of wetlands covered in its mission, including lakes and rivers, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans. Then, farming and agricultural practices must be related to this convention.

- c. United Nations Framework Convention on the Climate Change, Rio de Janeiro, 1992.

Agriculture and climate change are strongly linked. Agriculture is part of the climate change problem, contributing about 13.5 percent of annual greenhouse gas (GHG) emissions (with forestry contributing an additional 19 percent), compared with 13.1 percent from transportation. Agriculture is, however, also part of the solution, offering promising opportunities for mitigating GHG emissions through carbon sequestration, soil and land use management, and biomass production<sup>11</sup>.

Climate change threatens agricultural production through higher and more variable temperatures, changes in precipitation patterns, and increased

<sup>6</sup> Kiss A and Shelton D, *International Environmental Law*, Transnational Publishers, New York, 1991, p 36.

<sup>7</sup> Principle 4 of Rio Declaration on Environment and Development, 1992.

<sup>8</sup> Principle 25 of Rio Declaration on Environment and Development, 1992.

<sup>9</sup> Dixon M, *Cases and Materials on International Law*, Blackstone Press, 2000, p 485.

<sup>10</sup> Birnie P and Boyle A, *International Law and the Environment*, Clarendon Press, Oxford, 1992.

<sup>11</sup> *Agriculture and Climate Change: An Agenda for Negotiation in Copenhagen*, International Food Policy Research Institute, May 009, [www.ifpri.org](http://www.ifpri.org).

occurrences of extreme events such as droughts and floods. In the Conference of Parties (COP)15 in Copenhagen, December 2009, agriculture had been taken into account among other sectors in the Convention. In that COP, some countries are grouped into an AdHoc Working Group of Long-term Co-operative Action (AWC-LCA). Technical papers, presentations and discussions from the workshop are inputs to inform parties of any role of agriculture under mitigation under the AWG-LCA.

d. Kyoto Protocol to the United Nations Conventions on the Climate Change, Kyoto 1997.

Agriculture under the Kyoto Protocol is mentioned in several articles, such as Article 2.1 which state that each party included in Annex I, in achieving its quantified emission limitation and reduction commitments, in order to promote sustainable development, shall do certain actions, includes in sub article (iii) promotion of sustainable form of agriculture in light of climate change consideration. In article 10 of the Protocol, all parties, based on the common but differentiated responsibilities, should have specific national and regional development priorities, objectives and circumstances that measures to mitigate climate change and facilitate adequate adaptation to climate change, and this also includes agriculture. In Annex A of the Protocol, sectors or sources categories includes agriculture, that contains of enteric fermentation, manure management, rice cultivation, agricultural soils, prescribed burning of savannas, field burning of agricultural residues and others.

e. United Nations Convention on Biological Diversity, Rio de Janeiro 1992.

The purpose of this convention is to protect the genetic pool of all species. It takes an integrated rather than sectoral approach to conservation and sustainability of biological diversity. The convention thus addresses

conservation of biological resources, their sustainable use, access to genetic resources, sharing of benefits derived from the use of genetic material, and access to technology, including biotechnology. This convention introduce for the first time that biological diversity is a common concern of humanity. States must identify important components of biological diversity and priorities which may need special conservation measures, as well as identify and monitor processes and activities which may have significant adverse effects on biological diversity. They also must develop national strategies and plans, integrating conservation of biological diversity into relevant sectoral plans and programs and into national decision making. Sustainable use is a major theme of the convention. Parties agree to regulate or manage harvested biological resources, developing sustainable methods. This convention contains the general principles of international environmental law, such as responsibility for transfrontier damage<sup>12</sup>, information<sup>13</sup>, cooperation<sup>14</sup>, repair and prevention<sup>15</sup>.

f. Cartagena Protocol on Biosafety to the Convention of Biological Diversity, Cartagena 1996.

In the CBD 1992, biotechnology defined as any technological application that utilizes biological systems, living organisms, or derivation of them, to create or modify products or processes to a specific use. One of the most controversial subjects concerning this science is the potential hazards associated with the handling and introduction into the environment of genetically modified organisms (GMOs). The need to promote biosafety has centered on two related issues, first, the handling of GMOs at the laboratory level, in order to protect works and prevent the accidental liberation of such organisms into the surrounding ecosystem ("contained use"); second, the need for regulatory systems to govern the deliberate

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<sup>12</sup> Article 3 of the CBD.

<sup>13</sup> Article 14 and 17 of the CBD.

<sup>14</sup> Article 5 of the CBD.

<sup>15</sup> Article 14 of the CBD.

release of GMOs into the environment, either for testing purpose or on commercial scale. In agriculture, research using GMOs is quite common. For example, research to introduce herbicide resistance into virtually all major crops as a means of making it easier to control weeds. Additionally, because of noxious effects of long-term pesticide use, genetic engineering of microorganisms has developed as an alternative strategy to improve pest control. Some 100 fungus species and many bacteria species are known to have insecticidal effects.

- g. Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, Nagoya 2010.

Delegates from more than 100 countries agreed the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the early hours of 29 October. The Nagoya Protocol sets terms on how countries will permit access to genetic resources, share the benefits arising from their use, and cooperate with one another in allegations of misuse. It will come into force 90 days after it has been ratified by at least 50 parties. The Protocol addresses issues that have pitted countries of the North and South against one other for decades. Its adoption should act as a balm on old wounds. It will help to create transparency and trust between countries, and trust is absolutely essential for countries to cooperate in using genetic resources in ways that promote food security and economic development. Some of the most contentious issues in the last stretch of negotiations included the measures that “user countries” would take to monitor and enforce compliance with the agreements that provide access to genetic resources from other countries; whether the scope of the Protocol would extend beyond genetic resources to biological resources more generally; and how the holders of traditional knowledge related to

genetic resources would be involved in procedures of access to such knowledge. The Protocol recognizes pre-existing norms for access and benefit sharing established by the International Treaty on Plant Genetic Resources for Food and Agriculture. The Nagoya Protocol also explicitly creates space for the development of future specialized access and benefit sharing regimes that are consistent with the objectives of the Convention on Biological Diversity and the Protocol. This is good news because it seems likely that it will be important in the future for the international community to agree to multilateral access and benefit sharing norms for other genetic resources used in agriculture and not covered by the International Treaty, for example agricultural microbial genetic resources or farm animal genetic resources.

### C. Conclusion

One important aspect to handle environmental problems is through an effective legal system in the three levels, which are bilateral, regional and international level. Then, the role of International Environmental Law is essential in this point. The weakness of the legal system in the International Environmental Law is because of the number of soft law instruments is as much as the hard law, or even more. The characteristic of soft law instruments is that it does not oblige state to implement the instrument, but it is more like a suggestion. Then, the word “should” is more likely to be used rather than the word “must”. Other thing is that this kind of instrument has moral sanction and not a legal sanction, then it is more a morally binding instrument rather than legally bindings.

Food security and environmental protection are interdependent. Efforts to achieve food security should not be harmful to the environment, while at the same time environmental conservation is crucial to support food security. Sustainable agriculture is one of the solutions to reach food security without harming the environment. Sustainable agriculture is the ability of farmers to produce food for prolonged periods without causing environmental damage. Sustainable agriculture effects both the physical in ensuring sustainable agriculture.

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