

Forum: Economic and Social Council II

Issue: Promoting biotechnology in agricultural in LEDC's

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Introduction

Biotechnology is the use of biological, living organisms to produce commercial products. Biotechnology allowed certain crops to be genetically modified to produce better yielding and pest-resistant crops. In many LEDCs today, biotechnology implementation has been slow and this is an issue for the UN as it wishes to further promote the use of biotechnology to improve agricultural productivity as well as sustainability. In the late 20th century, the Green Revolution (Third Agricultural Revolution) brought large crop yields through the use of new, genetically modified organisms (GMOs). Countries that were once import-dependent on staple crops became exporting countries with new genetically modified crops. However, much of the Green Revolution's methods were only applicable in MEDCs who had the capital to invest in these new agricultural techniques. Until today, LEDC'S continue to struggle to implement biotechnology in their nation. LEDCs are the target market for biotechnology as they do not possess many of these technologies, which they direly need. However, there are economic concerns such as the increase in unemployment this implementation will bring and other economic disparities. It is in this light that the normal practices of biotechnology in agriculture are looked down upon as counter productive as it may at times worsen the situation. However there is a sense of urgency of the necessity for many countries to have a plan for the long run of their agricultural economy or they will be running into issues of food shortages and such. The Food and Agriculture Organization (FAO) of the UN is responsible for UN oversight on biotechnology in LEDCs. The FAO believes that "biotechnology provides powerful tools for the sustainable development of agriculture, fisheries and forestry, as well as the food industry," but cautions against its integration among all of the world's countries including LEDCs. Thus, biotechnology must continue to be pursued and promoted in order to achieve agricultural sustainability in LEDCs.

Definition of Key Terms

Food and Agriculture Organization (FAO)

A UN (ECOSOC) agency that leads international efforts to defeat hunger. The FAO helps developing countries and countries in transition modernize and improve agriculture, forestry and fisheries practices and ensure good nutrition for all.

Green Revolution (Third Agricultural Revolution)

The rapid diffusion of new agricultural technology (biotechnology), especially new high-yield seeds and fertilizers. Thus, agricultural productivity at a global scale has increased faster than the human population.

Sustainable Development (SD)

Development of where we are not using finite resources and are coming up to strategies to be able to grow and expand without harming the environment and the ability to carry on in the long run.

General Overview

The role of agricultural biotechnologies for production of bio-energy in developing countries

A wide range of biotechnologies are available and many of them can be applied for bio-energy production in developing countries. They include, among others, fermentation, genomics and genetic modification and cover applications to micro-organisms, crops and forest trees. In the context of bio-energy production, they can be used to increase the efficiency of both parts of the production cycle i.e. the production of biomass for bio-energy purposes and the conversion of the biomass to bio-fuels.

Coping with water scarcity in developing countries: What role for agricultural biotechnologies

The availability of water is a challenge for all countries, but especially for those with scarce water resources and where the livelihoods of its people depend heavily on agriculture. The term 'biotechnology' includes a broad suite of tools that present varying degrees of technical sophistication and require different levels of capital input. A number of them can be used to mitigate water scarcity in agriculture, including a variety of plant biotechnologies, e.g. marker-assisted selection (MAS), and microbial biotechnologies, e.g. use of mycorrhizal fungi as a bio-fertilizer.

Timeline of Events

Date	Description of event
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1960	Rice production in the Philippines doubled because of the implementation of a new hybrid rice breed called IR8 and IR36. IR36 is the most widely grown rice crop around the world because of better pest-resistance, better yields, faster maturity and requires less intensive labor.
1992	The World Declaration on Nutrition adopted by the International Conference on Nutrition
1992-1999	Acceptance of Biodiversity and Climate Change Conventions as international law, ratified by over 120 countries
1993	Establishment of the U.S. President's Council on Sustainable Development and its Task Force on Sustainable Agriculture

UN Involvement, Relevant Resolutions, Treaties and Events

- NGO Sustainable Agriculture Treaty, Global Forum at Rio de Janeiro, June 1-15, 1992
- The role of agricultural biotechnologies for production of bio-energy in developing countries. Background Document to Conference 15 of the FAO Biotechnology Forum (10 November to 14 December 2008).
- Biotechnology, bio-safety and the CGIAR: Promoting best practice in science and policy. Report of a workshop held on 22-24 April 2008 in Los Banos, the Philippines, organized by the Science Council of the Consultative Group on International Agricultural Research (CGIAR), the International Rice Research Institute and Biodiversity International.
- The state of development of biotechnologies as they relate to the management of animal genetic resources and their potential application in developing countries. Written by K. Boa-Amponsem and G. Minozzi and published by the FAO Commission on Genetic Resources for Food and Agriculture as part of its Background Study Paper series.

Bibliography

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