
Annotation 3**Designing the new country case studies:****Selection of sectors**

As explained in Annotation 1, UNEP/ETB will launch new country case studies on the environmental, social and economic impacts of trade liberalization in the agriculture sector. These new studies intend to focus on the effects of existing WTO Agreements, as well as on the possible effects of further liberalization in this sector.

At present, it is intended to focus the studies on only one sector (possibly one crop) in order to facilitate the comparisons between countries. It has however to be noted, that if additional funding is secured by UNEP/ETB, then the studies could analyze two sectors.

One of the first tasks of the present Preparatory Workshop is to select one or two crop sectors, which would be the most appropriate for UNEP country case studies. In this context, some criteria, which could guide the decision-making process, are proposed hereafter:

- Availability of data (economic, social and environmental data) and models;
- Economic and cultural importance of the sector in the different types of countries;
- The potential for further trade liberalization in this sector;
- Relevance of the sector from an environmental point of view;
- Potential food security problems;
- Others

As a preliminary selection, UNEP/ETB would like to propose the following crops:

- maize
- wheat
- rice

However, if other suggestions are made, the preparatory group could also discuss them.

Maize

Maize is grown at latitudes varying from the equator to slightly above 50 degrees north and south, from sea level to over 3000 meters elevation, in cool and hot climates, and with growing cycles ranging from 3 to 13 months. A versatile crop, it has tremendous genetic variability, which enables it to thrive well under lowland tropical, subtropical, and temperate climates. It is grown in more countries than any other cereal and it is the third most important cereal crop in the world, after wheat and rice. In the developing world, maize ranks third, after rice and wheat. Six nations

(USA, China, Brazil, Mexico, France, Argentina) produce 75% of the world's maize supply. The USA alone produces 39% of the total. Where it is grown for human food, maize is an important source of calories for the poor. Average annual per capita human consumption of maize is 20kg in developing countries, but in Latin America and the Caribbean it approaches 80kg and, in Sub-Saharan Africa, 60kg. Maize provides about one-third of the mean caloric intake in these two regions and less than 5 percent in other regions. (Source: CGIAR :Consultative Group on International Agricultural Research; Iowa State University)

Rice

Rice is the main source of food for about half of the world's population. It is cultivated in more than 100 countries on every continent except for Antarctica, although 91 percent of the world's rice is grown and consumed in Asia. Over the millennia, different types of rice evolved that were cultivated under different ecological conditions. There are now four recognized ecosystems under which rice is grown: irrigated, rainfed lowland, upland, and flood-prone. Globally, rice is the most important crop in terms of its contribution to human diets and value of production. Rice provides between 35% and 80% of the calories consumed by 3.3 billion people in Asia, and 8% of food energy for 1 billion people in sub-Saharan Africa and Latin America and the Caribbean. Although rice protein ranks high in nutritional quality among cereals, protein content is modest in rice. (Source: CGIAR)

Wheat

Wheat is the world's largest cereal-grass crop. Global production of wheat is now approaching 600 million tons, with international trade approximately 100 million tons annually. One reason for its popularity is that, unlike other cereals, wheat contains a high amount of gluten, the protein that provides the elasticity necessary for excellent bread making. Over 30,000 varieties of wheat exist. Wheat is Asia's second most important staple and has been growing much faster than rice. Wheat grain, a major source of energy in human diet, is higher in protein content than almost all other cereals. (Source: CGIAR)

Environmental impacts

Relative contribution to sources of environmental impacts on soils and water of different crops providing livestock feed.					
Relative magnitude of impacts of crops on different components of the environment					
Crop	Erosion (risk and contribution)	Nutrient loss (leaching and run-off)	Water use (soil moisture fertility status)	Nutrient demand (impact on soil)	Pesticide use (impacts on biodiversity and pollution)
Maize	**	***	***	**	***
Wheat	*	***	***	**	***
Soybean	**	*	**	*	**
Cassava	*	**	**	***	*
Sweet potato	*	**	**	***	*
*, ** and *** indicating low, moderate or high potential impact.					
Source: Hendy et al., 1995. (FAO website)					

Note: this table does not cover rice, so ETB will seek additional references which allow comparison between the impacts of these three crops, including in the experts' meeting.

StatisticsSource: FAOSTAT: <http://apps.fao.org/default.htm>

Production (Mt), 2000			
	World	Developing countries	Developed countries
Maize	593,543,500	257,232,200	336,311,200
Rice	594,381,500	568,430,100	25,951,440
Wheat	583,925,100	266,854,700	317,070,400

Exports in quantity (Mt), 1999			
	World	Developing countries	Developed countries
Maize	78,495,892		65,460,672
Rice	25,986,434		5,026,531
Wheat	114,092,825		102,695,151
Wheat + flour	126,446,764		112,728,093

Exports in Value (1000\$), 1999			
	World	Developing countries	Developed countries
Maize	8,707,902		7,226,728
Rice	7,903,233		2,209,917
Wheat	14,440,962		13,118,485
Wheat + flour	16,256,496		14,544,145

Imports in quantity (Mt), 1999			
	World	Developing countries	Developed countries
Maize	76,661,013		31,896,887
Rice	26,081,157		5,126,416
Wheat	112,475,528		41,427,825
Wheat + flour	123,203,430		45,008,823

Imports in Value (1000\$), 1999			
	World	Developing countries	Developed countries
Maize	9,816,692		4,512,370
Rice	8,761,280		2,356,305
Wheat	16,197,416		5,929,962
Wheat + flour	17,838,617		6,531,709