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**Environmental Implications of Liberalizing Trade in
Agriculture and Fish Products -
The Case of Uganda**

Draft Discussion Paper

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AGRICULTURE

Background

1. The agricultural sector has remained dominant in Uganda's economy. In the 1960's, Uganda produced and exported a diversified mixture of agricultural products compared to its neighbors in the region. However, following political upheavals and social strife that characterized most of the seventies to mid eighties both the production and export base of the country plummeted leaving virtually coffee as the only export commodity. In 1986, agriculture accounted for about 58% of Gross Domestic Product (GDP). However with a revitalized manufacturing sector This has declined to account for about 43% of GDP.
2. Uganda's agriculture is dominated by food production, which accounts for more than two thirds of agricultural GDP. Livestock production accounts for another 23% of agricultural GDP while fisheries accounts for 8%. While the country is endowed with some of the best agricultural land in the region with a relatively favorable climate, only 5 million hectares out of the 17 million hectares of arable land is under cultivation. Except for tea, most farming in Uganda is subsistence, dominated by small holders. Cultivated areas per household vary greatly with a majority ranging between 0.1 to about 1 hectare. Agriculture employs about 87% of the population mainly in the rural areas and accounts for over 90% of exports. Manufacturing accounts for about 10% of GDP and hardly appears in export in export earnings.

Structural adjustment implications for agriculture and Fisheries.

3. When the NRM government came in power in 1986, the economy was in ruins. An Economic Recovery Programme (ERP) was launched in 1987 followed by a Rehabilitation and Development Plan(RDP) in 1993 and the Structural Adjustment Programme (SAP) thereafter. The objective of the programme was to initiate processes to bring about sustainable improvement in the standard of living of the people of Uganda through policy and structural reforms aimed at; restoring internal and external financial stability and lowering inflation through prudent fiscal and monetary management; creating conditions for rapid and sustainable growth of GDP through deregulation of the incentive

and regulatory framework and developing human capital through investment, education, health and other social services.

4. Key policy measures undertaken by GOU under this programme included:

- inculcating discipline in public expenditure,
- divestiture of state enterprises,
- liberalization of interest and foreign exchange rate,
- tightening monetary policy,
- return of expropriated assets to rightful owners,
- removal of price controls and deregulation of internal trade,
- provision of tax and other incentives to investors and,
- complete liberalization of both internal and external trade.

5. These policy measures have registered positive impact on the economy with GDP growing at an average rate of 5.8% per annum from 1986/87 to 1993/94, declining to about 5% per annum in 1996/97 as a result of prolonged drought. However, despite this strong growth per capita incomes remain among the lowest in the World and many social and economic problems persist in Uganda.

6. Because of international commodity price fluctuation, and in order to reduce balance of payment deficit, Government adopted an export diversification strategy that aims at increasing the value of non-traditional exports (NTEs) on a sustainable basis. As a result of this, and coupled with good macroeconomic conditions, the value of NTE exports have increased steadily over time. Table I describes performance of major NTEs during the period 1995 to 1998.

TABLE I : Performance of some NTEs ; 1995-1998

PRODUCT	1995 (Million \$ FOB)	1996 (Million \$ FOB)	1997 (Million \$ FOB)	1998 (Million \$ FOB)
Cut flowers	2.30	10.00	10.79	14.2
Fresh Fruits and Vegetables	0.63	1.42	1.24	2.30
Essential oils and Spices	2.64	2.42	1.24	1.34
Papain	4.46	1.11	2.80	4.98
Cocoa	0.64	1.53	1.51	2.12
Total	10.67	16.48	17.58	24.94

Source: Agribusiness Development Center (ADC)

Plan for the modernization of agriculture

7. In addition to the diversification strategy, Government is developing a policy framework for modernization of agriculture so that it (agriculture) grows differently from the past and contributes fully to poverty eradication in Uganda. The main objective of the plan is to raise productivity in farming and agro-processing. It is envisaged that successful implementation of the plan will see; a competitive agriculture with lower costs per unit of production; a modernizing agriculture with adoption of high-yielding, disease and pest – resistant planting materials, fertilizers and chemical inputs; a diversifying agriculture with high value commodities and higher income elasticity of demand commodities, especially, flowers, fruits and vegetables with increased trade in cereals in the regional markets; increased traditional exports of coffee, tea and cotton, new and increased exports in horticulture, fish and spices.

8. This deliberate effort of Government, coupled with conducive macro-economic conditions is expected to lead to further expansion of agricultural production. Increased agricultural production has a number of implications for the environment, including expansion of land under agriculture and the associated changes in land use ;increased use of agro-inputs like pesticides and fertilisers, increased

demand for agricultural water and irrigation, to mention but a few. These developments have environmental implications.

9. Base line environmental status-some examples.

9.1 Maize and Beans

Maize and beans are grown mainly at subsistence level. The area under these crops vary a great deal, but are generally between 0.1 and 0.6 ha. In a typical maize and beans growing system, total area under cultivation is less than 50% of the arable land. Improved seeds and agro-chemicals are used by less than 10% of producers. Commonly, maize and beans are inter-cropped and at harvest time crop residuals are either left to decompose on the farm, burnt or used as wood fuel.

The major environmental impacts observed in the maize and bean growing areas include; soil erosion, deforestation/clearing of woodland, pressure for additional land and use of hilltops/hill sides. Close to 60% and 10% of the producer's face significant cases of soil erosion and deforestation respectively. The measures being taken to mitigate their negative impacts include mainly mulching, crop rotation, bush fallowing agro-forestry, planting grass strips and to a lesser extent tree planting.

9.2 Flowers - Roses

Rose production is extremely management intensive and requires high levels of skills, capital inputs and modern techniques. Rose production does not require large chunks of land. Environmental problems associated with rose growing revolve around the heavy usage of fertilizers, fungicides and insecticides. The most commonly used fertilizers are; *Calcium Nitrate, Potash and Fe (Chelate)*. In the case of fungicides, *Ridomil, Nimrod and Rovral* are widely used while *Birgade, Folimat, Apollo and Lanate* represent some of the insecticides used.

Unless these chemicals are handled carefully and disposed off properly, there is bound to be some negative impact both on the environment and farm workers.

9.3 . **Vanilla**

Vanilla is normally inter-planted among coffee and bananas. As such, vanilla growing involves minimum or no clearance of virgin land. There are no significant cases where forests have been cleared for establishment of vanilla farms. There is virtually no use of chemicals in vanilla production and processing. On the contrary, wastes such as dry grass and coffee husks are used for mulching and manuring the vanilla. Furthermore, since vanilla requires shade, the trees planted improve the ecosystems.

A few problems with vanilla have however been reported by farmers, particularly in regard to its displacement of crops that were previously inter-cropped with bananas and coffee. There has been a growing tendency to grow such crops in more marginal lands , including fragile wetlands which was not the case in the past.

9.4 **Chilies**

Chilies are mostly inter-cropped with cassava, bananas and hence take up little arable land. The key environmental impacts associated with chilli are:

i) Clearance of forest and woodlands;

ii) Incidence of Soil Erosion/Soil

Degradation: Soil degradation is one of the most crucial environmental problems in Chilli growing districts. The main degradation processes are soil erosion and deforestation. Close to 67% of chilli growers experience significant levels of soil erosion.

9.5 **Passion Fruits**

Passion fruits are mostly inter-cropped with coffee. No fertilizers or chemicals are used by growers of the local variety. However, in the case of hybrid growers, fertilizers are sometimes used. Dithane M-45 is the common pesticide used. At present there is no adverse environmental impacts associated with passion fruit growing. Most farmers abstain from use of fertilizer because it is not economically viable.

9.6 Mushrooms

At present, there are no major environmental problems associated with the growing of mushroom. The use of chemicals is minimal and used polyphone bags are burnt off. Being an indoor activity, mushroom growing takes up small space and uses agricultural and industrial wastes. The residues from mushroom growing form a good source of farm manure.

FISHERIES

Just like the case for agricultural growth, SAPs have enabled fisheries to evolve into a major sector in Uganda's economy during the last decade.

- 9.2 Uganda has a very rich fisheries resource base. It is estimated that 17% of its geographical surface is made up of fresh water lakes and rivers. The estimated total catch from the lakes was 217000 metric tons valued at Ug.Shillings 73.93 in 1998. Lake Victoria continues to give the highest catch because of its size, which is estimated, at over 50% of the total catch. The number of fishermen is estimated to be 75,000 throughout the country while over 7000,000 other people are employed in fisheries related employment such as transporting, processing, net making and repairs, boat construction, distributing and marketing of fish.
- 9.3 Over 98% of all fish production in Uganda is wild fishing. Fish and fish products exports grew from 1664 metric tones in 1990 to 10,260 mt in 1997 with a peak at 16046 mt in 1995. In value terms exports grew from \$1.386 million to \$45.03m in 1990 and 1996 respectively.

The export of fresh/chilled fish to the European Union (EU) countries was interrupted when the EU slapped a temporary ban to this activity in 1997 implying a decline in exports to about \$2,998m. When the ban was partially lifted in August, 1998 exports rose ,earning the economy \$42m by end of 1998.

According to a recently concluded study funded by UNEP – “Capacity building for integrating environmental considerations in development, planning and decision making with particular reference to the Fishing Industry in Uganda”, tremendous growth

in Uganda's fish exports has led to a variety of concerns over the long-term sustainability of the industry. These include:

- over-fishing and resource depletion;
 - the loss of biodiversity associated with introduction of exotic species introductions and unsustainable fishing methods;
 - effluent pollution from fish processing and other industries;
 - the degradation of coastal ecosystems and environmental health conditions associated with rapid market development of the industry; and
 - resource mismanagement due to unharmonised national environmental standards among the riparian states of Lake Victoria (Uganda, Kenya and Tanzania).
- i) Concerns of overfishing and resource mismanagement have arisen since 1996 following significant declines in fish catches, particularly in Lake Victoria. This trend is highly suggestive of fishing at levels above the lake's maximum sustainable yield (MSY). According to the report, MSYs for Uganda's fisheries grounds remain highly uncertain, making it difficult to establish harvest limits for this resource. Whereas the fisheries department prescribes a limit the amount of fish each processing plant can process, most of them operate at about twice their approved capacity. There is thus a distinct danger that uncontrolled demand for fish from the fish processing industry could drive harvest levels above current levels, and potentially well above MSYs in many of the country's lakes.
- (ii) The study further attributes declining fish catches to intensified use of unsustainable fishing methods over the past several years. To increase harvests, potentially dangerous exotic species have been introduced into lakes and poison fishing has been used in some fishing grounds. Most recently, this latter practice has led to the European Union (EU) to impose a ban on fish exports from Uganda to protect the health of its consumers.

- iii) The pollution of water bodies is a growing problem for the Uganda fisheries industry. Most of the country's fish processing plants and industrial facilities – located near Lake Victoria – discharge either untreated or poorly treated effluent into the lakes and adjacent water bodies. The majority of these installations do not have proper waste treatment facilities and hence do not comply with standards issued by the National Environment Management Authority (NEMA). The discharged effluents lead not only to biologically toxic water environments for fish, but also to eutrophication and the overgrowth of both algae and water hyacinth that compete with fish for habitat and oxygenated water.
- iv) Increased fishing activity and mushrooming communities around landing sites have resulted in a variety of quality problems. The importance of improving quality in the industry is highlighted by two recent bans on fish imports from Uganda by the EU due to quality deficiencies. The competent authority (Uganda National Bureau of Standards, UNBS) and the Fisheries Department are responsible for ensuring that quality standards are adhered to by all players in the fisheries sector. However, both organizations have limited capacity to effectively execute their responsibilities. As outstanding quality deficiencies remain at all stages of the fish chain – from the lake to the fish processing factories.
- v) In Uganda, poor infrastructure hinders quality assurance: landing sites do not have adequate facilities for fish handling; road transport of fish to processing centres is made difficult for remote landing sites due to poor road conditions; refrigeration facilities to preserve fish after harvest are largely non-existent; and unbridled growth of fishing communities lacking proper sewerage and refuse disposal facilities has led to degraded coastal environments.
- vi) Growing social problems also threaten the industry. The economic well-being of the fisheries communities are dependent on stable export markets for processed fish, yet at the same time, high export levels result in lowered supplies of quality fish – at higher prices – for the domestic population who consume fish as a major source of protein. Currently, much of the local population can only afford to

consume rejected fish and fish frames, a trend that has been growing, and increasingly compromises their nutritional status.

- vii) Lastly, the study notes that effort undertaken to promote sustainable fish resources in internationally accessed bodies of water such as Lake Victoria, can only be successful when regional environmental co-operation is established.

Policies to mitigate environmental concerns.

12. In order to increase agricultural production without adversely affecting the natural resource base and causing environmental hazards, government has committed itself to enforcing appropriate rules and regulation on the use of natural resources and environmental management. Public sensitisation on environment conservation issues like proper land use and management, rational use of fertilizers and pesticides, appropriate fishing methods, proper waste disposal and management, optimum stocking rates, pollution etc. is already underway through environmental awareness campaigns by both NGOs and respective public institutions.

Government has already taken steps to establish appropriate policies and regulation and institutions like the National Environmental Management Authority (NEMA) to ensure effective, efficient and sustainable natural resource use and environmental management even beyond the Agricultural Modernization process.

13. Standards and technical regulations on waste water discharge have been developed to improve on waste management in the country. In fact a number of discussions have already been undertaken with potential polluters on how to improve on compliance.

The preliminary discussions indicate that Uganda's standards are stringent and may have significant impacts on the cost streams of processors if they comply. There also indications that compliance will not be voluntary, implying further need for inspections and auditing.

There is also a feeling that some manufacturers, having re-located from environmentally clean countries would like to have an easy day in Uganda.

Research questions

14. A number of research questions arise from this preliminary discussion. They include;
- is the liberalised flow of investments into uganda's manufacturing sector beneficial in long-run?
 - How can increased resource use be balanced so as not undermine the long-time sustainability of the country' resource base?
 - Are current environmental requirements adequate? Do they imply very stringent conditions for compliance?
 - Does Uganda risk re-location of marginal industry to its neighbouring countries that have more lenient environment requirements? How can this be prevented without necessarily compromising our desire to protect the environment?
 - Does Uganda have sufficient human/institutional capacities to contain environmental concerns that might spin off agriculture and fish farming?
 - Will stringent sanitary and pythosanitary requirements imposed by EU act as barriers to accessing this market?
 - Was EU justified to invoke the precautionary provisions of SPS to ban Ugandan fish exports?
 - Does Uganda have the capacity and resources to argue its cases effectively through the dispute settlement mechanism? consider the case of fish ban.
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