



Environment and Sustainability in Horticulture in Eastern and Southern Africa

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Background

It is well established that agriculture can harm the environment, whether it is commercial or subsistence. Commercial agriculture in some specific cases may be less harmful if, for example, its localised damage is traded off with extensive low-input practiced under subsistence systems. In the absence of irrigation, most vegetable growers in Uganda invade wetlands to produce out of season so as to catch the best prices on the market. On the other hand Uganda signed the interim EU-ACP, EPA in Jan-2007 and the major focus for the EPA and post EPA discussions on FFV has been on pursuing aggressive growth in the sector through irrigation and other inputs. Uganda, like other developing countries is expected to negotiate preferential access for its products and this is should attract new investment to benefit in the areas of production and physical infrastructure. However, improved productivity based on intensive use of inputs, if not implemented with strict adherence to codes of conduct, has the potential to harm ecosystems of pollinators, earthworms and marine life. Biodiversity conservation is articulated in Uganda's constitution and national legislation.

In 2004, Uganda's fruit and vegetable production was equivalent to about one percent of the world's total production. The average yield of fruits and vegetables is low, 11.8 and 6.9 metric tonnes per hectare, respectively and of the available 19 million hectares of agriculture land, the area under fruits and

vegetables is less than 1%. But some projections estimate that by 2025, four million hectares in Uganda will be under cultivation for FFV.

Horticulture exports are worth US\$35 million per year and the monetary value of FFV and cut flowers has been increasing steadily since 2003. For cut flowers, Uganda was third in the list of exporters to the EU in 2005, with two percent of total exports to the EU, behind Kenya (40 percent) and Ecuador (six percent). Yet the export horticulture industry is concerned that lucrative EU markets – where average unit prices can be five times higher than for regional tradeⁱ – are increasingly out of their reach as private voluntary standards (PVS) become embedded in the industry. Domestic and regional markets are less lucrative and if they are the main markets they could lead to prices being depressed, forcing farmers out of business or further into extensive, low-input systems of production that are not eco-friendly.

Between 2004 and 2008, the country's exports of organic agricultural goods grew by an average annual rate of 67% to US\$22.5 million. Uganda has Africa's highest number of smallholder farmers (206,803) engaged in organic agriculture and a relatively high level of its farm land area under organic cultivation (88,439 hectares or 0.71% of farm land). Neighbouring countries rank much lower in terms of farm land being used for organic production: Kenya (3,307 hectares), Ethiopia (2,601 hectares) and Tanzania (23,732 hectares).

There are important opportunities in the horticulture sector, considering that over 40 percent of current production of FFV is undertaken by smallholders, and that the population in Uganda is growing at a rate of 3.3 percent per year, needing jobs in the future.

This background led the National Environmental Management Agency (NEMA) and UNEP to commission a study in 2009ⁱⁱ on the environmental impacts of the horticulture sector focusing on cut flowers and fruits and vegetables (FFV), as they make a significant contribution to Uganda's growth in general and exports in particular. NEMA is responsible for regulating development in a way that does not harm the environment. The purpose of the joint NEMA-UNEP Impact Assessment (IA) of 2009 was to “empower Government agencies and the private sector with relevant information to pursue sustainable trade with the EU under the EU-ACP Economic Partnership Agreement (EPA)”.

The study notes that Uganda has a wealth of natural ecosystems and over half of Africa's bird species live in Uganda. While Uganda ranks 9th in the world in terms of number of mammalian species, the study notes that loss of biodiversity in the country is around 1% per decade and is associated with

changes in land use. Government agencies and the private sector understand the linkage between environment and trade and appreciate the role of certification as a value added, marketing tool.

To promote sustainable production it has to be linked to markets and trade. Although certification could be a means of mitigating environmental impacts, unfortunately there are too many sustainable agriculture labels that consumers may not always be able to recognize and hence not be prepared to pay for the added value they promote.

1. Present status of environmental impact and sustainability measurements for horticultural production

A recent study commissioned by DfID Uganda suggests human induced climate change is likely to increase average temperatures in Uganda by up to 1.5 0C in the next 20 years and by up to 4.30C by the 2080s.¹ Associated with temperature increases will be changes in rainfall intensity and total annual rainfall amounts. As climate change does not happen in isolation, interacting with existing problems and challenges, predicted changes to the country's climate are likely to have profound social, economic, and environmental impacts. Potential consequences for stability will extend throughout the Great Lakes Region and East Africa.

Uganda is widely seen as unprepared for climate change risks. However, recent action has been taken. The Government of Uganda has established a Climate Change Unit and developed a National Adaptation Programmes of Action Plan. In addition, the Department of Meteorology in the Ministry of Water and Environment is identified as a National Focal Point for Climate Change. Revision of the Poverty Eradication Action Plan also raises climate change as an important development challenge.

Among the university sector there are two strong horticulture courses at Makerere and Mountains of the Moon Universities. Though courses are really not focused on climate change the faculty of agricultural sciences teaches on issues of weather and climate, physical processes controlling the environment, interactions between the atmosphere , land, ocean and ecosystem, meteorology parameters and recording, climatologically records and mitigation of adverse climatic events.

¹ Hepworth, N. & Golden, M. (2008) Climate Change in Uganda: Understanding the Implications and Appraising the Response. Scoping Mission for DFID Uganda.

2. Present management of climate change impact on horticulture

GoU agencies, research institutions and the private sector understand the linkage between environment and trade and the need for sustainable environment as an important component of sustainable trade. Initial IA brought stakeholders together through workshops which culminated in the formation of a task force to formulate the Uganda-GAP.

The Ministry of Agriculture Animal Industry and Fisheries (MAAIF) has in the recent years initiated a drive towards water for production through irrigation. Some of these approaches include harnessing and exploiting the water bodies for both small and large irrigation system (MAAIF is renovating all the 5 irrigation schemes around the country) as well as issues of rain water harvesting during the wet seasons. This critical activity which is a key component for addressing key constraints affecting production, is to be enhanced under the Farm Income Enhancement and Forestry Conservation Project

In terms of policy development, the Ministry of Trade and Industry of the Uganda government has a trade desk to handle all matters of trade including environmental impacts and they utilized the initial IA study findings in their trade negotiations with the EU, where biodiversity was incorporated before signing the interim EU-ACP, EPA in January of 2007. However as policy change can take a long time, appropriate lobbying is needed for policy development and approval before mainstreaming some of the recommendations under the IA done in 2009.

At the national level, environmental and sustainability issues on horticultural production and marketing are managed though both public and private sector institutions, principally NEMA (public) and NOGAMU (private). Expertise is available to articulate these issues outside the two organisations, mainly in the form of private freelance consultants capable of rendering various services from impact assessments to mitigation measures. Expertise on certification seems to be less abundant, as is the testing infrastructure. Although NEMA is a public institution, it has private sector interests catered for at the management board level.

There are a number of donor agencies involved in the horticulture sector, with some specifically focusing on sustainability issues such as Agro Eco and the EPOPA program. Agri-ProFocus (APF), founded in 2005, is a partnership of 26 Dutch donor agencies, credit institutions, training and knowledge institutions and companies. Their shared mission is to provide coherent and demand driven support to enhance the capacity of producer organizations (PO's) in developing farmer entrepreneurship within the

context of poverty reduction but tend to mainstream sustainability and biodiversity issues in their programs. A number of Swedish and Danish organizations are also involved in promoting sustainability issues.

Climate Change and Development – Adapting by Reducing Vulnerability (CC DARE)- Uganda is a joint UNEP-UNDP partnership programme funded with a grant from the Government of Denmark. The programme was officially launched on February 1st 2008 and has duration of three years.

The programme is a response to the unparalleled vulnerability of the sub-Saharan region in terms of projected climate change impacts and of challenges in building technical and institutional capacity. The CC DARE programme seeks to address these challenges by providing demand-driven, targeted and flexible technical and financial support to sub-Saharan African countries for the integration of climate change issues into development planning and decision-making frameworks. CC DARE is designed to complement and strengthen ongoing and planned nationally based climate change adaptation and risk management in Sub-Saharan Africa.

CC DARE focuses on the following outcomes for reducing vulnerability in sub-Saharan Africa:

- Enhanced knowledge, skills and partnerships in systematic mainstreaming of climate change issues;
- Stronger technical and institutional capacities for identifying, prioritizing and implementing cost effective adaptive measures consistent with national development goals;
- Materials documenting the experience and knowledge gained to allow others to benefit from the evolving body of best practices;
- Refined or strengthened national adaptation plans and policies;
- Enhanced regional cooperation on climate change issues.

CC DARE offers technical and financial support to a portfolio of activities within capacity building for integrating climate change into development planning and sector specific support on climate change adaptation.

Carbon credit dealing projects in Uganda

In Uganda the carbon sequestration is the dense forests (Forest Rehabilitation Project in Mount Elgon and Kibble National Parks, Uganda), Major developmental benefits for local communities from these projects include an increased number of timber and non-timber forest products from regenerated forests, employment opportunities from forestry activities, and increased incomes from the sale of carbon credits.

There is evidence that many carbon sequestration projects are able to provide necessary financial assistance for biodiversity conservation. For example, the Forest Rehabilitation Project is helping to conserve Mount Elgon and Kibble National Parks in Uganda. These parks were widely deforested during the political strife of the 1970s and 1980s when various ethnic groups sought refuge in them. The Forest Rehabilitation Project seeks to reverse this degradation by planting indigenous tree species and educating local communities on the value of conservation. In addition to carbon sequestration, these activities are helping to conserve the local biodiversity and protect endangered wildlife such as chimpanzees.

Because of Mable's significance in economic and biological terms, the Government of Uganda recognises it as an important region for understanding climate change impacts and developing mitigation and adoption measures. Mbale has been chosen as one of 10 pilot regions for the Territorial Approach to Climate Change TACC initiative of the UNDP, UNEP and networks of regional governments. Mbale will have the support and engagement of the UNDP over the next 2 years to develop its own Integrated Territorial Climate Plan in association with the Ugandan Government. This plan will be the basis for applications for UN carbon finance funds from the CDM, REDD, GEF etc. In parallel, the partnership will work on some 'quick win' projects to build the confidence of local partners and demonstrate the potential of this approach.

This project will provide a model which can be adapted to a range of other situations and Welsh involvement at this stage will provide us with capacity for its replication in our other partner regions, strengthening the existing Welsh civil society links with our African partner regions. Further advantages to Wales in relation to both business and academic markets in Uganda will also follow [see final section].

.Climate change impacts and human consequences identified for this region include landslides, floods, species loss, population movement due to environmental refugee influx from the semi-arid north-east and to out migration into Kenya, and increased deforestation, as farmers shift productive activities to higher upland levels.

3. On-going strategy at regional level

Regional governments are key players in the fight against climate change as around 50% - 80% of the decisions impacting upon carbon emissions are taken at a sub national or regional level. Regional governments are responsible for developing and implementing policy, programs, legislation and fiscal mechanisms in the areas of environment and land-use and also for developing policies appropriate to the specific characteristics of their region as well as communicating with the public.

Regional governments can implement measures including land-use policies that support smart growth, sustainable forest and agriculture practices and fiscal measures to support these initiatives.

Although there are a number of projects run by NGOs such as send a cow that promote urban horticulture, there is no evidence of regional coordination of such efforts.

To address sustainability issues while promoting trade, a number of recommendations have been made in some literatureⁱⁱⁱ:

1. Increased investment should be linked to the implementation of one existing code of conduct.
2. Services that facilitate trade and sustainable production, such as water management should be developed
3. Investments in research and implementation of new technologies
4. Integrated Pest Management and renewable energies should be sustained and further disseminated.
5. Training programs should be implemented
6. Natural resources co-management should be developed
7. Private standards and labels should be more coordinated.
8. A communication campaign in the EU would help consumers to chose a “sustainable” product and stimulate good practices in the ESA region
9. Credit programs should be implemented to help smallholders enter the sector

ⁱ Kleih U, Ssango F, Kyazze F, Graffham A and MacGregor J (2007): Impact of EurepGAP on smallscale vegetable growers in Uganda. Agrifood standards and pro-poor growth in Africa

ⁱⁱ Guloba M. 2010: Integrated Assessment & Policy Response in Uganda: Economic Policy Research Centre (EPRC) & National environment management agency (NEMA). Presentation at the Final Outcome Meeting for country projects Geneva, 25th, March, 2010

ⁱⁱⁱ PricewaterhouseCoopers (2006): Sustainability Impact Assessment of the EU-ACP Economic Partnership Agreements – Phase Three, Horticulture in Eastern and Southern Africa (ESA). Paris, PricewaterhouseCoopers, September 2006, 82 pages.
