Floriculture in developing Africa: IPM in Ethiopia

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Setting: Floriculture in Africa

Working for the Business Unit Greenhouse Horticulture of Wageningen UR, I will present today a case about protected horticulture. Protected horticulture is quickly developing in several developing countries. This summer Wageningen UR Greenhouse Horticulture started a research which aimed to find out how activities of the Dutch horticulture contribute to sustainable social-economic development in developing countries. In the research we choose to focus at some African countries, mainly because floriculture is a booming business in these countries.

From the 1990's floriculture has developed in several East-African countries, especially in Kenya and Ethiopia, but also in Uganda and Zimbabwe. The most important export cut flower in these countries is rose. The production costs of these roses are much lower than the production costs in The Netherlands, even when transport costs are taken in account. So a lot of Dutchmen started a farm in Africa. After harvest and transport, most roses are sold at the Dutch auction, like the Dutch growers were used to do. The lower production costs are the main motive for Dutch entrepreneurs to start a production site in East-Africa. Besides the Dutch and other foreign investments, also local entrepreneurs started to produce for the European market.

The flower industry being a young industry in these East-African countries, has only a small number of local suppliers. I will give an overview for Kenya and Ethiopia first. After that I will give a short description of the South-African industry:

In **Kenya**, where floriculture started in the mid 80's, the flower industry has developed into a rather mature and stabile industry and cluster. A lot of economic activities have been locally set up. But still most of the inputs are being imported. Locally set up are:

- new farms (sometimes in joint venture with Dutch investors or growers)
- a Phytosanitaire Service,
- producer and exporter organizations,
- a certification body for the flower industry in African countries,
- suppliers of greenhouses, shadow nets, irrigation and cooling techniques, packaging materials and other supplies for post-harvest handling,
- and some local producers of plant material.

Often these suppliers are joint ventures with foreign companies.

- There are two local, large firms that supply natural enemies for IPM, Integrated Pest Management. These firms also produces and develops bio-presticides.
- To fullfil the need for biological control agents some joint ventures are initiated that visit the flower farms to support the growers with IPM.

In **Ethiopia** the flower industry started to develop only about five years ago. The number of farms as well as the production surface have developed very quickly. In this country is only a very small local cluster, which means:

- some small scale firms deliver irrigation systems and computers, as well as the labor for installation,
- part of the packaging material is locally produced,
- some producer and exporter associations are set up,
- this year a handling and storage compartment has been build at the International Airport,
- and some joint ventures have started between Dutch companies and local companies, mostly focused at producing young plants, breeding, tissue culture or production of other, for Ethiopian new, cut flowers.
- Also a phytosanitair lab is being set up recently to check export flowers.

But for almost al of the needed inputs the farmers are very dependent on import from The Netherlands, Europe, Israel and Asia.

Floriculture in **South-Africa** has a longer history. It has become a rather independent and mature industry. The country is very independent and internally focused. As a result of the Apartheid regime most countries boycotted trade. This was the trigger for the industry to further develop the local supply industry, producers associations and the knowledge infrastructure. A complete independent industry was build up, as well as the cluster around it. Except for innovative high-technology investments, all inputs are locally available. The local market is of major importance, only one third of all flowers are being exported.

Case: Integrated Pest Management in Ethiopia

My case is about the introduction and up-scaling of Integrated Pest Management at Ethiopian farms and in the floriculture industry. But first I will tell more about floricultural development in the country.

Government played and still plays an important role in the development of the sector. After the fall of the communistic regime the government introduced at the beginning of the 90's a free market policy. Also private companies were allowed in the agricultural sector. The government also started to attract foreign investors to obtain foreign exchange for economic growth, for job creation and development of the supplying industry. To stimulate foreign investment several actions were token by the government, like duty-free import and several policies to stimulate agricultural export. In five years time the industry has developed rapidly into 900 ha this year. At this moment almost half of all new companies are foreign ownership, mainly Dutchmen, Indians and Israelis. At 80% of the production area roses are grown. Production of roses is rather modern and becoming more sustainable. Ethiopia is an export country: around 85 % of all flowers are exported, mainly to Europe. Most of the needed inputs has to be imported from Europe or Asia.

Recent years several projects have been started and conducted that all aim to further develop the industry and the cluster around. One of these projects is about IPM:

With the rapid development of the sector also public concerns within and outside Ethiopia started growing regarding labor conditions at the farm, the environmental impact (over-exploiting water resources), and human health due to the misuse or overuse of pesticides and fertilizers. Ethiopian government as well as several research programs aims to reduce pesticide use while maintaining agricultural productivity. In this light the Ethiopian Horticulture Producers and Exporters Organization (EPHEA) has taken the initiative to develop a code of conduct. It resulted in a project in the Ethiopia-Netherlands Horticulture Partnership Program, in which Wageningen UR and EPHEA worked together to develop a Code of Conduct. Narrowly related there is also run a project for Integrated Pest Management.

The business intervention
In the project Integrated Pest Management was introduced at Ethiopian farms and was worked at up-scaling of IPM in the industry. One of the activities was the training of growers in IPM. At the same time also extension agents and researchers were trained and supported in IPM. To provide on a regularly basis for natural enemies also a supply chain was set up between a Dutch supplier of natural enemies and the growers in Ethiopia.

New local greenhouse floriculture entrepreneurship and activities plus spin-off to the local rural economy
The intervention (project) can be seen as a first step in a total new development towards sustainable production. At this moment spin-off has been mainly at the field of training the trainers and set up activities in Ethiopia horticultural research. The two most important resulting local (social-economic) activities:

- The development of sustainable approaches for managing pests and diseases requires accurate training in specific topics. In the project courses were supplied to farm managers around IPM. The Ethiopian Horticultural Producers and Exporters Association had a role in the project. Now and in future the association will give basic courses for staff of farms that have newly started IPM and advanced courses for already participating farms. People get trained to give those courses. Also in study groups that are facilitated by the association the farm managers will exchange their experiences in IPM.
- As researchers, growers, field workers and students hold different sets of ecological knowledge, they can learn from ach other. Therefore MSc's at Jimma University are given attention, in order to develop 'a new type of professionals'. This is done by linking research training with on farm trials.

The position of EPHEA has become stronger in the industry, because of the facilitating (training) role the association plays in IPM. Another effect of the intervention is that at this moment a phytosanitaire lab is set up in that strongly cooperates with the Dutch PD (Plant Health Services).

Because IPM is only a first step in the development towards sustainable production, the effects for the cluster have been in the field of services development and capacity building. Until now no new agribusiness companies or other local economic activities have started. But it can be expected that in a few years time there will start new agribusiness related

companies. One can think of firms that produce and supply natural enemies, as well as commercial scout agents.

Factors that analysed or hampered local floriculture business
In case of this project, both the Ethiopian government and the industry (EPHEA and growers) were and still are convinced that besides the intervention of introducing IPM at the farms it is also important to change the knowledge infrastructure (and in time other parts of the cluster). This willingness has catalyzed the development of IPM: i.e. the introduction of IPM at the farm, the set up of training facilities at EPHEA and the linking of research training with on farm trials.

There have also been hampering factors. During the project the development of IPM at local farms was hampered from the beginning by a lack of knowledge of IPM. Therefore scouts and farm managers had to be trained in the application of natural enemies and in the recognition and monitoring of mite and natural enemies in the crop.
Also there were and still are no local companies available that can supply natural enemies. With the support of Koppert (a natural enemy firm in Holland) this problem was tackled. This company supplied on regular basis the needed insects.
During the project became clear that logistics of the imported insects from the airport to the farm needed to be well-organized. It is extremely important that the predators reach the farm as soon as possible, without delay during transport, and are transported swiftly and under cooled conditions. Arrangements were made for this.

Discussion

For the discussion, I want to focus on why – besides the IPM knowledge development and related services development – other services (like finances, entrepreneurship, and education) and infrastructure are not yet well-developed in Ethiopia.

1. In South-Africa a mature and stabile supply cluster has been developed. Why do you think this was successful in South-Africa, and also somewhat in Kenya, but is the Ethiopian industry mainly relying on import from The Netherlands? How can we break this, so that more economic activities will be developed local?

   Or: What can be the contribution of a) government, b) private sector, c) donors and d) knowledge institutions in catalyzing the surrounding service provision of the greenhouses? Examples of such services: local pest control agents, phytosanitaire laboratory, water and nutrient analysis.
   Or should we accept it to be all in the hands of non-local (foreign) service providers?

2. How should public-private partnerships be organized and provisioned?

3. What do you think will remain of the local economy and the floriculture cluster when foreign investors leave Ethiopia?
   Will the local farmers survive? Can producers keep on producing according quality requirements?

Or: Do you (as participants of the seminar) have any experience in your own country of other countries of what happens when foreign investors leave, or other experiences that can probably be used in this study?

4. What do you think are the most important factors in making interventions as this a success?