

Sustainable Development of Horticultural Crops in Zambia for Food Security, Income Generation and in Support of the Tourism Industry

James E. Simon¹, Bismarck Diawuo², Elton Jefthas³, Petrus Langenhoven³, Newton Phiri², H. Rodolfo Juliani¹ and Ramu Govindasamy¹

1. New Use Agriculture and Natural Plant Products Program, Rutgers University, New Brunswick, NJ
2. Agribusiness for Sustainable African Plant Products Program (ASNAPP-Zambia), Lusaka, Zambia
3. ASNAPP-South Africa, Stellenbosch, South Africa



RUTGERS



USAID
FROM THE AMERICAN PEOPLE

Introduction

The potential benefits of horticulture for the developing world are numerous. Economic growth in horticultural products has far exceeded the growth of other agricultural commodities, and the demand for horticultural produce continues to accelerate in both domestic and international markets (USAID, 2005). Yet, Africa is the one region of the world where per capita supply of fresh produce has seen virtually no increase over the past 40 years (Weigner and Lumpkin, 2005).

Several constraints have limited the commercialization of horticultural production and threatening agriculture in general in Zambia. Some of these include: application of unsustainable agricultural practices is reducing soil fertility and increasing erosion; use of old technologies; poor quality germplasm; limited storage and infrastructure; and the application of improper crop production practices. Consequently, farmers are producing less from a given piece of land and after home consumption they have little or nothing to sell.

In Southern Zambia (Livingstone and surrounding areas) the demand for assorted vegetables has been estimated at 1,500 MT/year. Using a market-driven model with strong private sector partnership, ASNAPP in concert with several communities spearheaded the production of fresh vegetables into this region which is now accounting for producing 900MT by local farmers in the surrounding regions accounting for 60% of market demand. With an average price of \$1.25/kg, there is a \$750,000/year market potential which farmers in new communities could tap and access with the correct approach and high quality produce. Since the gap is supplied by farmers as far as Lusaka and beyond with majority of the produce imported from South Africa, vegetable production has great potential to contribute to poverty alleviation, income generation and food security in southern Zambia.

Goals and objectives

The goals of this project are to increase food security and generate income for rural farmers through quality production of vegetables. This project will enable rural communities to have access to appropriate germplasm and involve them in the production, post-harvest handling and commercialization of high value produce to diversify their incomes. Growers will also be introduced and trained in greenhouse tunnel construction and systems to produce vegetables in open field and under more controlled greenhouses will be compared. Access to information is an important component of this project. Farmers will be trained not only in production, commercialization of fresh produce but also on business skill development, constraints noted in other communities. Building upon our prior work which introduced commercial horticultural production into this region, the objectives of this program are to 1) Train farmers in vegetable production; 2) Increase production of high quality vegetables; 3) Ensure sustainability of the farmers' crop enterprises and assist them to approach horticulture production as an agri-business.

Project Objectives and Outputs

Objective 1: To train farmers in vegetable production.

The surge in the demand for vegetables in the commercial municipalities near the project sites, and in Zambia now as a whole, has put pressure on farmers to produce more vegetables to meet the buyer's specifications. Farmers require assistance in good agricultural practices, sourcing the right planting material and hands-on training in GAP as the quality of the final produce depend mostly on these factors (Fig. 1).

For this project, we are providing training to a group of farmers (114, 60% women) in different areas of vegetable production (Figs. 2-3). We are also focusing on introducing greenhouse and tunnels into new communities both to develop new micro-enterprise and in the production of greenhouse seedlings for the greater Livingstone area (Figs. 4-5). Other activities include establishment of demonstration plots for use in capacity building and the transfer of appropriate and high quality technologies in commercial vegetable production to these communities. These field sites will be used in farmer field days for farmers to exchange ideas.



Fig. 1. Capacity building of the community farmers in high value horticulture is a cornerstone of this Horticulture CRSP project.

Objective 2: To increase production of high quality vegetables.

For any new group of farmers to access the market and command premium for their crops it is necessary for us to first train the farmers continuously in quality control and quality assurance issues relating to the production and marketing of quality vegetable products (from seed through final grade/sorted produce).

For this shovel ready project, we are providing quality assurance and monitoring of producer groups, trainings on quality for vegetable producers, development of specification sheets for 10 selected vegetables and training of farmers in post-harvest handling of produce.

By the end of this project, we expect the farmers to be able to produce higher quality and acceptable products which command premium prices. Thus, market accessibility enhanced and increase in available volumes for sale and profit margins for the farmers (Figs. 6-7).

Objective 3: To ensure sustainability of the farmers' crop enterprises and assist them to approach horticulture production as an agri-business.

Farmers and farmer associations most often look forward to development organizations to guide them throughout the entire supply chain. Though such interventions are welcomed, they must be time bound and sustainable. Unfortunately, most of these projects have not been sustainable after the departure of the project promoters. An overarching factor in this has been the lack of leaders or entrepreneurs within the communities with the requisite skills to continue and champion the project. ASNAPP will provide entrepreneurship training to develop capable leaders and businesswomen and businessmen within the communities to take over agro dealership, marketing, and other leadership roles to ensure sustainability of the project. Currently, the Sun Hotel in Livingstone will be the main output for this Hort CRSP farmers (Figs. 2-3, 8-9).

Building of capacity: a cornerstone of this Horticulture CRSP project

This project is also focusing on entrepreneurship capacity building, to assist farmers to develop crop budgets for selected vegetables, proper invoicing; negotiating skills to bargain with buyers; understanding expectations and of timeliness and train capable farmers to be seed and input dealers (Fig. 1).



Figs. 2-3 . Clement (chairman of Linda community) and Josephine (left picture in the center) are blind farmers and women association in Nsongwe (right) to whom ASNAPP Zambia are providing assistance in seedling and vegetable production.



Figs. 4-5. This project is providing assistance in building greenhouses (270m²) that will provide 2 million seedlings to generate an annual income of >\$65,000 back to the farmer groups.



Figs. 6-7. Steve Mwinga selling his fresh produce to Livingstone hotels, which is leading to significant economics benefits to his family and the community producers.

CONCLUSION

This project is implementing a holistic, and comprehensive market-first science-driven model that uses a participatory approach and community and private sector partnerships that cover the full commodity chain (seed, production, post-harvest handling, quality, marketing and business skills) into new communities which have not previously been engaged in the commercial production of horticultural crops. An important output is the implementation of demonstration plots and field days to expand these extension services to a wider audience. We are conducting research on several horticultural technologies all of which will be transferred to the growers. We are currently working on six greenhouses covering an area of 270 m² which will provide about 2.1 million seedlings to the farmers. This can generate gross income of about \$69,000 (US\$) on an annual basis for the communities. Market information and market trends are also being communicated to farm leaders who will in turn make the information available to all the farmers under their care. This project is synergistic and builds upon our earlier ASNAPP projects which led to the introduction of commercial vegetable production in this region. This Int. Hort CRSP provides the vehicle to expand into new communities and brings them into commercial horticulture for the first time.

Integration of gender issues into project activities:

This project is geared towards African women. Past experience showed us the importance of income earned by women for the welfare of the whole family (particularly children) and their exceptional skills in management and micro-enterprise development. At the farm level, this program is designed to indirectly benefit 450 farmers of which 55% are African women. In trainings, 100 farmers will be benefited. Lead farmer fields owned by women (at least 80%) will have a central role in transferring experiences to wider farmer communities and workshops will be aimed to benefit women (66%).



Figs. 8-9. The customers of Sun Hotel in Livingstone (R), near the Victoria Falls (L) demand only the highest quality and sustainable supply of vegetables, which is currently being supplied by disadvantaged Hort CRSP farmers in the Livingstone area.

Acknowledgements

This work was funded by UC-Davis, Grant Number EPP-A-00-09-00004, as part of the USAID funded International Horticultural CRSP. We thank the farmer communities with whom we have the honor of working, the New Jersey Agric. Exp. Station. We also thank Regional Center for Southern Africa (RCSA) USAID/Southern Africa, Pretoria, South Africa. For More information, contact: Prof. Jim Simon: jesimon123@hotmail.com; jimsimon@aesop.rutgers.edu Or visit our websites: www.asnapp.org; www.pfidnp.org