

# Is there a business case for early generation seed?

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National Agricultural Research Institutes in 11 Sub-Saharan African countries expanded their pre-basic sweetpotato seed production. Ten institutions started to implement their business plans; of which six earned revenues from the seed sales to start revolving funds.



Fig 1. General Manager Dr. Esther Kimani of KEPHIS champions the use of the business plan as a good practice to ensure sustainable production of early generation seed

## ❖ What is the problem?

National Agricultural Research Institutes (NARIs) are hindered from delivering on their mandate for early generation seed (pre-basic) production by unreliable funding streams. Although many NARIs are shifting towards a business orientation to compensate for reductions in government spending, there are limited examples of how they can organise viable cost recovery enterprises.

## ❖ What do we want to achieve?

We aim to strengthen technical, financial and institutional capacities of NARIs, and to ensure that they develop and use business plans to run successful sweetpotato seed enterprises. We want to test different business models to understand what public-private partnership arrangements will ensure a consistent supply of quality seed.

## ❖ Where and with whom are we working?

We are currently working in 11 countries (Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mozambique,

Nigeria, Rwanda, Tanzania, Uganda and Zambia), with the NARIs, and with a private tissue culture laboratory in Uganda.

## ❖ How are we making it happen?

We supported nine NARIs and one tissue culture laboratory to develop preliminary business plans for early generation seed production. The business plans include: an analysis of the sub-sector, production trends, cost structure, marketing and promotion activities. Financial analysis using recall data includes: cash flows, gross margin analysis (GMA), internal rates of return (IRR) and net present value (NPV). Together with senior NARI management, we are identifying potential mechanisms (e.g. revolving funds) to channel proceeds from the sale of pre-basic seed back into production.

## ❖ What have we achieved and learned so far?

We prepared a synthesis of ten business plans. This showed that institutions chose to produce and sell pre-basic or basic seed, or both. The rationale behind the choice of product and its business potential was based on a review of the



country seed value chains and existing market segments, coupled with the estimates of current and future annual demand for these products. A Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis provided a better understanding of the business potential. We identified strategies for exploiting opportunities, and for mitigating weaknesses to reduce vulnerability to threats in the business environment.

Over a ten-year plan period, the ten institutions can make a viable business of producing early generation seed since they all have positive NPV. Apart from National Crops Resources Research Institute (NaCRRI) whose NPV was marginal (only about US\$ 19), the values for all the rest range from US\$ 5,000 to over US\$ 200,000. These preliminary findings will be validated through monitoring data of actual costs in the coming year.

Ten take home messages:

1. The existing demand for early generation sweetpotato seed is yet to be met.
2. A business orientation is necessary and possible.
3. The business is either one or a combination of two products: pre-basic and basic seed.
4. NARIs should estimate and coordinate seed supply requirements at different segments of the chain.
5. There are different market segments, so it is critical to understand actual and potential customers.
6. Financial analysis can identify the break-even selling price for each product and differential pricing used to encourage advance orders.
7. The future market for pre-basic seed will be affected by liberalisation of Seed Acts; and the

introduction of seed inspections for sweetpotato. This is positive as it will allow NARIs to differentiate their product from others.

8. NARIs should optimise their business environment – they often have a monopoly and comparative advantage in expertise.
9. To maximise profits, costs and inefficient production practices need to be minimised. Tissue culture production is expensive. Screenhouse production should be optimized and input costs for tissue culture plantlets reduced by using locally available or cheaper substitutes.
10. NARIs should seek out innovative partnerships with the private sector and programs with other vegetatively propagated crops.

#### ➤ What are the next steps?

An institutionalisation matrix has been adapted from PROLINOVA to monitor the implementation of the business plans. The key political, administrative, financial, socio-cultural and technical factors actions which will influence the success of the business plans are shown in Table 1.

In the coming year, Burkina Faso, Ghana and Nigeria will finalize their business plans using an improved data collection template. Real time data will be captured to prepare more accurate cost estimates in these countries as well as in Kenya and Tanzania. Sensitivity analysis will be conducted to improve our understanding of how revolving funds will contribute to the sustainability of the NARI seed businesses. We hope to demonstrate successful business models for public-private early generation seed production.

#### Partners:

- Kenya Plant Health Inspectorate Service, Plant Quarantine and Biosafety Station (KEPHIS-PQBS)
- National Crop Resources Research Institute (NaCRRI–Uganda)
- Rwanda Agricultural Bureau (RAB–Rwanda)
- Sugar Cane Research Institute (SRI–Kibaha) & Lake Zone Agricultural Research and Development Institute (LZARDI), Tanzania
- National Root Crops Research Institute (NRCRI), Nigeria
- Southern Agricultural Research Institute (SARI), Ethiopia
- Tigray Agricultural Research Institute (TARI), Ethiopia
- Crops Research Institute (CRI), Ghana
- Institut de l'Environnement et de Recherches Agricoles (INERA), Burkina Faso
- Instituto de Investigação Agrária de Moçambique (Agrarian Research Institute of Mozambique) IIAM, Mozambique
- Zambia Agricultural Research Institute (ZARI–Zambia)
- Department of Agricultural Research Services (DARS), Malawi
- BIOCROPS (U) Ltd Tissue Culture Laboratory, Uganda

Table 1: Framework to support institutionalization of pre-basic seed production business plan and revolving fund

	Political	Technical	Administrative	Socio-cultural
Requirement	<ol style="list-style-type: none"> <li>1. Director General supports implementation of business plan</li> <li>2. Business plan reflected in institution policy and annual planning tools</li> <li>3. Local government buy-in</li> </ol>	<ol style="list-style-type: none"> <li>1. Improve multiplication rates</li> <li>2. Reduce costs</li> <li>3. Quality assurance</li> <li>4. Monitoring production</li> <li>5. Cost structure and data</li> </ol>	<ol style="list-style-type: none"> <li>1. Annual budget for pre-basic seed production</li> <li>2. Disbursement schedule for sweetpotato seed production</li> </ol>	<ol style="list-style-type: none"> <li>1. Ownership</li> <li>2. Motivation</li> <li>3. Teamwork</li> </ol>
Actions	<ol style="list-style-type: none"> <li>1. Brief Director General, Director of Finance and Head of seed unit</li> <li>2. Biannual review of progress on implementation by senior management team</li> <li>3. Use of business plan institutionalisation assessment tool</li> </ol>	<ol style="list-style-type: none"> <li>1. Test methods for increasing multiplication rates</li> <li>2. Optimise screen house production and minimise tissue culture requirement</li> <li>3. Implement internal quality assurance procedures</li> <li>4. Monitor production of tissue culture and pre-basic seed production</li> <li>5. Data collection of costs of production</li> </ol>	<ol style="list-style-type: none"> <li>1. Institution agreement on guidelines for management of revolving fund (or sub-ledger for sweetpotato).</li> <li>2. Agree on regular meetings to review budget and disbursements</li> </ol>	<ol style="list-style-type: none"> <li>1. Business plan presented and reviewed at biannual stakeholder coordination meetings</li> <li>2. Branding of product/s</li> <li>3. Celebration of milestones in business plan and revolving fund, within country and Sub-Saharan Africa</li> <li>4. Annual training for key administrative and technical skills for business plan and revolving fund implementation</li> </ol>

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