

RIU

Farmers learn to make the most of seed

Validated RNRRS Output.

Good crops start with good seed. A new manual and set of posters are now available to help farmers make the most of seed. Most farmers in Sub-Saharan Africa don't buy seed: they save their own or trade with other farmers. But, this arrangement often doesn't work—drought, pests, diseases, civil wars or other troubles mean they just don't have enough good quality seed. Over 1000 smallholder vegetable farmers in Kiambu District, Kenya, learned the best ways of choosing, drying and storing seed by discovering for themselves. Now, government staff in Kenya, Uganda and Tanzania use these methods to help extension workers and other farmers make sure they have reliable supplies of healthy seed for vegetables, sorghum, yam, cassava, groundnuts, sweet potato, maize, and beans.

Project Ref: **CPP69:**

Topic: **7. Spreading the Word: Knowledge Management & Dissemination**

Lead Organisation: **CABI, Africa Regional Centre, Kenya**

Source: **Crop Protection Programme**

Document Contents:

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Description

CPP69

Research into Use

NR International
Park House
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ME20 6SN
UK

Geographical regions included:

[Kenya, Tanzania, Uganda,](#)

Target Audiences for this content:

[Crop farmers,](#)

A. Description of the research output(s)

1. Working title of output or cluster of outputs.

The Good seed Initiative (GSI) – sharing the learning from CPP programmes into pro-poor seed systems in East Africa

2. Name of relevant RNRRS Programme(s) commissioning supporting research and also indicate other funding sources, if applicable.

DFID Crop Protection Programme
Swiss Development Cooperation (SDC)

3. Provide relevant R numbers

R8480 (ZA0690)

DR 03022 SDC Good Seed Initiative

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4. Describe the RNRRS output or cluster of outputs being proposed and when was it produced? (**max. 400 words**). This requires a clear and concise description of the output(s) and the problem the output(s) aimed to address. Please incorporate and highlight (in bold) key words that would/could be used to select your output when held in a database.

The **Good Seed Initiative** – sharing the learning from the Crop Protection Programme (CPP) into pro-poor seed systems in East Africa project was carried out from March 2005 to January 2006. **Farmer-saved** and **farmer-traded seed** continues to be the dominant source of seed for 80-90% of farmers in Sub-Saharan Africa (Tripp, 2001; Morogoro Workshop, 2003). The supply of farmer-saved and farmer-traded seed is, however, prone to disruption due to natural and civil upheavals, drought, pests and diseases. Numerous CPP/CPPH projects have directly addressed aspects of seed quality and health, and some have worked with farmer participatory selection of resistant varieties. R8480, therefore, reviewed the relevant seed related CPP/CPPH project outputs and came up with the following outputs:

1. Knowledge and opportunities for improvement of **seed quality/health** and **seed dissemination systems** derived from CPP programmes extracted, compiled, analysed, and collated.
 - Consultative review of CPP and other seed-related projects was conducted to gather evidence of importance, and scope for improvements, to farmer-saved and farmer-traded seed. A detailed review of the projects was published in a review document entitled “**Opportunities for Improving the Quality, Health and Dissemination of Farmer-Saved and Farmer-Traded Seed in East Africa**”, and 500 copies were disseminated. Key findings of the review were:
 - There has been **seed-related** technological development, but there has been limited uptake of the same.
 - There is need to link together organisations or players with interest in seed systems in the region in order to avoid duplication/re-inventing the wheel.
 - There is need to harmonise seed related policies within the region/continent.
2. Specific seed-related outputs transformed into participatory learning exercises:
 - A **Discovery learning Manual** for improving the quality, health and dissemination of farmer-saved and farmer-traded seed in East Africa was produced, published and disseminated in and outside the East African Region. The manual contains **participatory-learning techniques** in the form of **participatory learning exercises** which encourage farmers to ascertain for themselves the potential value of new

knowledge and technologies for improving the quality and health of seed. 1000 copies of the manual were produced and disseminated.

3. Dissemination of principle lessons and learning exercises.

Posters were produced and disseminated, namely:

- **Seed Health** (English and Kiswahili)
- **Seed drying and storage** (English and Kiswahili).
- **Seed Selection** (English and Kiswahili).

The project also served as a dissemination pathway for outputs of R8312. Two posters were re-printed and disseminated, namely:

- How to produce Sukuma Wiki Seed.
- Benefits of Quality Kale Seed.

5. What is the type of output(s) being described here?

Please tick one or more of the following options.

| Product | Technology | Service | Process or Methodology | Policy | Other Please specify |
|----------------|-------------------|----------------|-------------------------------|---------------|---------------------------------|
| X | | | X | | |

6. What is the main commodity (ies) upon which the output(s) focussed? Could this output be applied to other commodities, if so, please comment

The outputs focused on the following commodities: Vegetables, root and tuber crops, sorghum, yam, cassava, groundnuts, sweet potato, maize, and beans.

The outputs could apply to all commodities which use seed (true or vegetative) for their propagation.

7. What production system(s) does/could the output(s) focus upon?

Please tick one or more of the following options. Leave blank if not applicable

| Semi-Arid | High potential | Hillsides | Forest-Agriculture | Peri-urban | Land water | Tropical moist forest | Cross-cutting |
|------------------|-----------------------|------------------|---------------------------|-------------------|-------------------|------------------------------|----------------------|
| X | X | X | X | X | | X | X |

8. What farming system(s) does the output(s) focus upon?

Please tick one or more of the following options (see Annex B for definitions).

Leave blank if not applicable

| Smallholder rainfed humid | Irrigated | Wetland rice based | Smallholder rainfed highland | Smallholder rainfed dry/cold | Dualistic | Coastal artisanal fishing |
|----------------------------------|------------------|---------------------------|-------------------------------------|-------------------------------------|------------------|----------------------------------|
| | | | | | | |

| | | | | | | |
|---|---|--|---|---|--|--|
| X | X | | X | X | | |
|---|---|--|---|---|--|--|

9. How could value be added to the output or additional constraints faced by poor people addressed by clustering this output with research outputs from other sources (RNRRS and non RNRRS)? (**max. 300 words**).

Please specify what other outputs your output(s) could be clustered. At this point you should make reference to the circulated list of RNRRS outputs for which proformas are currently being prepared.

From the key findings in the review of the seed-related projects, it is apparent that the approach used in this project to promote seed issues and systems could be more widely used to add value to this and other project outputs. These approaches are:

- Follow participatory approaches in disseminating outputs so that farmers are more likely to adopt and adapt the outputs.
- It is important to link organisations/institutions/players with interest in seed-related issues, for example linking breeders, policy makers/seed regulators, seed producers, seed health experts, seed traders and farmers.
- It is also important to have harmonised seed-related policies within the region/continent so that seed-related technologies developed and approved in one country can be disseminated to other countries in the region with similar environmental and crop production systems.

The Good Seed Initiative could therefore provide the barns for a seed-related cluster. The following outputs could be included in the cluster:

- Good Seed Initiative (R8480).
- Promotion of quality kale seed (R8439).
- Improving farmers' access to and management of diseases resistant maize cultivars in the Southern Highlands of Tanzania (R8422).
- Farmer multiplication systems (groundnuts/potato) (R8435).
- Commercial incentives for groundnut production and farmer led multiplication (R8442).
- Sustainable potato seed tuber management (R8435).
- PPT breeding disease resistant cassava (R8405).
- Clean seed yam (R8416).
- Dissemination of improved beans (R8415).
- Rapid multiplication of sweet potato (R8040).
- Rice varieties for Ghana (R8826).

Validation

B. Validation of the research output(s)

10. **How** were the output(s) validated and **who** validated them?

Please provide brief description of method(s) used and consider application, replication, adaptation and/or adoption in the context of any partner organisation and user groups involved. In addressing the “who” component detail which group(s) did the validation e.g. end users, intermediary organisation, government department, aid organisation, private company etc... This section should also be used to detail, if applicable, to which social group, gender, income category the validation was applied and any increases in productivity observed during validation (max. 500 words).

The project R8480 was for less than one year. However, the outputs were validated through farmer participatory exercises. For example, the “**Discovery Learning Manual**” and the **posters** were validated by working with over 1000 smallholder vegetable farmers in Lari Division of Kiambu District in Central Kenya. The farmers were put in groups and taken through the learning exercises using locally available materials such as dry maize grains, empty containers, charcoal pieces, flip charts and markers. The exercises were led by the research team from CABI Africa, and facilitated by the Farmer Participatory and Training Specialist in consultation with extensionists from the Ministry of Agriculture. The extension personnel of Lari Division mobilised the farmers during the exercises. A team from Kenya Plant Health Inspectorate Service brought in the regulatory aspects of seed production such as isolation distances and seed quality, which were already included in the learning exercises and the posters. After farmers were taken through the Discovery Learning Manual and the posters, they were asked to give their opinion on how easy it was to use the exercises, particularly those from the Discovery Learning Manual.

11. Where and when have the output(s) been validated?

Please indicate the places(s) and country(ies), any particular social group targeted and also indicate in which production system and farming system, using the options provided in questions 7 and 8 respectively, above (max 300 words).

The outputs were validated in Kinale, Lari Division of Kiambu District in Central Kenya. The validation took place in January 2006 among female and male kale farmers in the Peri-Urban production systems, within the smallholder rainfed highland farming system with some irrigation.

Current Situation

C. Current situation

12. How and by whom are the outputs currently being used? Please give a brief description (max. 250 words).

The outputs are being used for training of extension personnel and farmers by government institutions (Ministry of Agriculture, Kenya), seed regulatory bodies such as Kenya Plant Health Inspectorate Service in Kenya and the Tanzania Official Seed Certification Institute (TOSCI) in Tanzania. The outputs are also used for training by agriculture research institutes, Kenya Agriculture Research Institute (KARI), Namulonge Agriculture and Animal Production Research Institute (NAARI) and the Coffee Research Institute (CORI), National Agriculture Research Organisation (NARO), and Uyolet Agriculture Research Institute (ARI) in Kenya, Uganda, and Tanzania, respectively. In addition, the outputs are being used for training of extensionists and farmers by Seed companies

and associations (Lagrotech Seed Company, Kenya; Simlaw Seeds, Kenya; Regina Seeds, Kenya and Seed Trade Association of Kenya), by the University (University of Nairobi), Non governmental and international organisations (the International Centre for Tropical Agriculture (CIAT) – Uganda and Malawi Offices; IPGRI-SSA, Kenya, Café Africa, Uganda; and Nucafe, Uganda) and by coffee institutes for training their extensionists and farmers for example, the Uganda Coffee Development Authority (UCDA) in Uganda. In addition, the outputs are being used for sensitising the public by parliamentarians (Members of Parliament including the Minister of Agriculture in Uganda).

13. **Where** are the outputs currently being used? As with Question 11 please indicate place(s) and countries where the outputs are being used (**max. 250 words**).

The outputs are being used in the following places:

| Place(s) | Country |
|--|----------|
| Kiambu, Bungoma, Kisi, Kisumu, Nakuru districts | Kenya |
| Central, Eastern and Western Regions | Uganda |
| Kilimanjaro, Central, Southern Highlands Regions | Tanzania |

14. **What is the scale of current use?** Indicating how quickly use was established and whether usage is still spreading (**max 250 words**).

No studies were carried out to determine the scale of the current use.

15. **In your experience what programmes, platforms, policy, institutional structures exist that have assisted with the promotion and/or adoption of the output(s) proposed here and in terms of capacity strengthening what do you see as the key facts of success?** (**max 350 words**).

The structures that have assisted with the promotion of the outputs are:

- The existing Swiss Agency for Development and Cooperation (SDC) funded Good Seed Initiative (GSI) project which has coordination structures in East Africa. The project which is being coordinated from CABI Africa for the African component has national coordinators and coordination committees which utilise the existing government structures in Kenya, Tanzania and Uganda.
- The existing institutional linkages which were developed by both the DFID-funded and the SDC-funded GSI projects. This includes seed companies, government institutions, international, community-based and non-governmental organisations.

Current Promotion

D. Current promotion/uptake pathways

16. **Where** is promotion currently taking place? Please indicate for each country specified detail what promotion is

taking place, by whom and indicate the scale of current promotion (**max 200 words**).

The outputs from the project are currently being promoted, well beyond the project life, through a sister project, the SDC funded “Good Seed Initiative” in the following places and countries

| Place(s) | Country |
|--|----------|
| Kiambu, Bungoma, Kisi, Kisumu, Nakuru districts | Kenya |
| Central, Eastern and Western Region | Uganda |
| Kilimanjaro, Central, Southern Highlands Regions | Tanzania |
| Central and Northern Regions | Malawi |

17. What are the current barriers preventing or slowing the adoption of the output(s)? Cover here institutional issues, those relating to policy, marketing, infrastructure, social exclusion etc. (**max 200 words**).

Language is the major barrier for the outputs. In particular the manual which is in English may not be understood by non-English speaking beneficiaries. Some countries use Kiswahili, an East African language, and may find it difficult to understand the information, especially the front line extension personnel. The posters are however, in both English and Kiswahili. It is envisaged that the outputs will also be used in all countries in East and Central Africa, and this includes the French speaking countries (Rwanda, Burundi, and Democratic Republic of Congo). In addition, Ethiopia uses Amharic language. The unavailability of the manual in Kiswahili, Amharic and French versions may therefore prevent or slow down the adoption of the outputs.

In addition there are limited operational funds for the SDC-funded Good Seed Initiative Project which is promoting the outputs. This implies that the extent to which the outputs can be disseminated and promoted is limited by the level of funding in the respective countries.

18. What changes are needed to remove/reduce these barriers to adoption? This section could be used to identify perceived capacity related issues (**max 200 words**).

There is a need, firstly, to translate the outputs into Kiswahili, French and Amharic to enable knowledge for improving quality of seeds, particularly seeds produced by farmers, to be utilised more widely. It is also important to make the outputs more readily available by utilising a wider range of dissemination channels, funds permitting, such as posting the outputs on seed related websites, putting the outputs on CD ROMs and distributing the CDs, distributing the outputs through seed related networks in the region e.g. Association for Strengthening Agriculture Research in East and Central Africa (ASARECA), and the whole of Africa. These will require funds for reproduction and delivery of the outputs. Furthermore, there is need to carry out awareness raising and training of, particularly the frontline extension personnel so that they are able to disseminate the information through existing or new Farmer Field Schools (FFSs) networks. To be included in the training sessions are other service providers such as agriculture advisory bodies, non-governmental organisations, and community-based organisations (CBOs).

The changes outlined above will require increased funding in order to facilitate the dissemination and adoption of the outputs.

19. *What lessons have you learnt about the best ways to get the outputs used by the largest number of poor people? (max 300 words).*

- There is need to disseminate outputs using both hard copies and in electronic versions e.g. the internet and CD ROMs.
- Training of beneficiaries of outputs is crucial to the adoption and utilisation of the project outputs. For example, it is important to include in any project farmer participatory methods as a way of facilitating adoption of outputs. Farmer Field Schools is one of the main farmer participatory methods which facilitate the evaluation of outputs by farmers through experimentation. Once a farmer is convinced that a particular output works better than traditional practices, he or she adopts the output without anybody telling him or her to do so. An added advantage of Farmer Participatory Methods is that the outputs can be adapted to the needs of the farmers through feedback mechanisms.
- The problem being addressed by a project must be known, and outputs must be providing solutions to the problem. This requires carrying out baseline surveys to ascertain the current status of the problem, which forms a basis for subsequent impact assessments.

Impacts On Poverty

E. Impacts on poverty to date

20. *Where have impact studies on poverty in relation to this output or cluster of outputs taken place? This should include any formal poverty impact studies (and it is appreciated that these will not be commonplace) and any less formal studies including any poverty mapping-type or monitoring work which allow for some analysis on impact on poverty to be made. Details of any cost-benefit analyses may also be detailed at this point. Please list studies here.*

Impact studies on poverty in relation to this output have not been conducted.

21. *Based on the evidence in the studies listed above, for each country detail how the poor have benefited from the application and/or adoption of the output(s) (max. 500 words):*

Not applicable – see 20 above.

What positive impacts on livelihoods have been recorded and over what time period have these impacts been observed? These impacts should be recorded against the capital assets (human, social, natural, physical and, financial) of the livelihoods framework;

- *For whom i.e. which type of person (gender, poverty group (see glossary for definitions) has there been a positive impact;*
- *Indicate the number of people who have realised a positive impact on their livelihood;*
- *Using whatever appropriate indicator was used detail what was the average percentage increase recorded*

*Environmental Impact***H. Environmental impact**

24. What are the direct and indirect environmental benefits related to the output(s) and their outcome(s)? (max 300 words)

This could include direct benefits from the application of the technology or policy action with local governments or multinational agencies to create environmentally sound policies or programmes. Any supporting and appropriate evidence can be provided in the form of an annex.

The direct and indirect benefits related to the use of the outputs are:

- Management of diseases and insect pests outlined in the outputs (posters, learning exercises manual) are based on non-chemical methods of managing the diseases and insect pests. For example the use of resistant varieties, selection of healthy seed in the field, proper storage facilities and conditions. All these if used will result in less dependence on pesticides which are detrimental to the environment. Therefore utilising the outputs will result in protecting the environment.
- In addition, utilisation of the outputs will help poor farmers produce adequate food and earn extra income, both of which will result in reduction in alternative cash earning activities which are detrimental to the environment. For example, in Africa it is common among the rural poor, who have no income and lack adequate food, to cut trees in the natural forests for selling as firewood or charcoal. This results in deforestation.

25. Are there any adverse environmental impacts related to the output(s) and their outcome(s)? (max 100 words)

No adverse environmental impacts are envisaged in relation to adoption of the outputs.

26. Do the outputs increase the capacity of poor people to cope with the effects of climate change, reduce the risks of natural disasters and increase their resilience? (max 200 words)

Yes. Climate change among others results in drought and an increase in diseases and insect pests. By utilising the outputs, the farmers can be able to access crop varieties which are resistant to drought, that's making the poor people cope with drought. In addition, the outputs from this project can help poor people control plant diseases and insect pests better by using environmental friendly disease and insect pest management options.