RIU

Credit and know-how boost farm incomes

Validated RNRRS Output.

Farm households in the highlands of western Kenya are improving their livelihoods using a community credit scheme and a set of decision-support tools. Depleted soils, due to continuous maize cropping, together with Striga infestation, have trapped farmers in a cycle of low yields and poor soil fertility. To diversify into higher value crops on their limited land, households must intensify maize production. The credit scheme lets farmers invest in fertilisers, while the decision-support tools help borrowers with land management questions. Although developed in Kenya, these tools are applicable to many areas of Africa dominated by poor, food-deficient, semi-subsistence farm households. In Kenya, the tools are promoted by a World Bank-funded project, and they have also been introduced in Uganda.

Project Ref: **NRSP16:**
Topic: **6. Promoting Success: Partnerships, Policy & Empowerment**
Lead Organisation: **Imperial College Wye, UK**
Source: **Natural Resources Systems Programme**

Document Contents:

Description, Validation, Current Situation, Current Promotion, Impacts On Poverty, Environmental Impact,

Description

NRSP16

Research into Use
NR International
Park House
Bradbourne Lane
Aylesford
Kent
ME20 6SN
UK

Geographical regions included:

Kenya, Uganda,

Target Audiences for this content:

Crop farmers, Livestock farmers, Fishers, Forest-dependent poor,

A.   Description of the research output(s)

1. Working title of output or cluster of outputs.
In addition, you are free to suggest a shorter more imaginative working title/acronym of 20 words or less.

Enhancing livelihoods and income through Integrated land management and Credit Provision

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

Natural Resources Systems Programme

3. Provide relevant R numbers (and/or programme development/dissemination reference numbers covering supporting research) along with the institutional partners (with individual contact persons (if appropriate)) involved in the project activities. As with the question above, this is primarily to allow for the legacy of the RNRRS to be acknowledged during the RIUP activities.

R7962

Contact person and Institutions

> *1.   Dr. Colin Poulton - Centre for Environmental Policy, Imperial College London, Wye, Ashford Kent, TN25 5AH, UK*
> *2.   Dr. James K. Ndufa – Kenya Foresty Research Institute, Regional Research Centre, Maseno P. O. Box 25199 Kisumu, Kenya*
> *3.   Mr Qureish Noordin – World Neighbours (Formerly of International Centre for Research in Agroforestry)*

*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.*

Three outputs are proposed:

1.   A community based **credit** scheme
2.   A set of **decision support tools** for better land management; correcting nutrient deficiencies; and **striga** weed control.
3.   An approach to intensifying crop production in semi-subsistence farming systems that stresses **co-ordinated service delivery**

These outputs were developed between 2001 and 2005 to address problems facing farm households in the

highlands of Western Kenya. In this high potential area, characterised by high population densities and small land holdings, but also chronic soil **phosphorus** deficiency, continuous **maize** cropping to satisfy household food needs has resulted in depleted soils unable to support even moderate agricultural performance. In addition to low soil fertility, striga infestation is endemic, further depressing maize yields. Despite the high priority placed by farmers on maize production, few households meet their food needs for more than five months of the year. With 80% of land under maize for home consumption, agricultural activities generate little cash income for investment in improving soils. Farmers are trapped in a cycle of low yields and poor **soil fertility**.

To free up scarce land for planting to **higher value crops**, households in these areas must intensify their maize production. This could simultaneously improve **food security**, generate cash income and enable them to invest in their natural resource base for future productivity.

To do this, households need to access a range of support services. Firstly, they require **market access** in order to realise improved income from crop sales. Secondly, they need technical knowledge on best cultural practices for new crops and on how to improve their soils. Thirdly, they must be able to access inorganic fertilisers and **improved seed** of crop varieties that are appropriate to local production conditions and markets. This requires both that **fertilisers** and seeds are available locally and that farmers are able to afford them.

Therefore, the community based credit scheme (known as SCOBICS) was developed to enable farmers to invest in fertilisers, whilst the decision support tools assist borrowers (and other local farmers) in land management decision-making. So far project R7962 has ensured that the farmers using these outputs can also access their preferred inputs and market information. Local mechanisms for coordinating agricultural services are being developed.

Although these outputs have been developed to address problems facing farm households in the highlands of Western Kenya, they are applicable to many areas of Africa dominated by poor, food-deficit, semi-subsistence farm households.

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	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 are focussed on maize. However, one of the keys to successful maize intensification on small farms is the simultaneous diversification to other crops that can be sold. In Western Kenya soya was promoted for this reason and also because it can contribute to soil fertility management and household nutrition.

We note that the credit model could be taken up with different commodities in many areas of medium–high agro-ecological potential. Indeed, larger farms with less serious phosphorus deficiencies would actually make it easier

to achieve viability!

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 (current)			X (potential)			

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			

*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

We suggest that the outputs of this research would benefit from being combined with other outputs that aim to

- Deliver technologies for increasing food security and soil fertility. In the particular context of western Kenya, clustering with outputs from CPP R8449/R8212 (ICIPE) is desirable;
- Build social capital to improve NRM (e.g. NRSP R7865, R7856/R8494) and to change policy processes in favour of pro-poor rural services for improved livelihoods;
- Enhance farmer access to markets for new and/or higher value commodities (various CPHP outputs).

If the credit scheme is scaled up in western Kenya, it would be desirable to partner with the Agmark project (http://www.cnfa.org/page.cfm?pageID=120) to benefit from the input voucher scheme that they have developed.

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)**.*

1. Decision Support Tools. These were developed with selected farmers from the project area in western Kenya, who contributed to seven local workshops dedicated to their development. Further feedback was subsequently obtained from a variety of stakeholders (farmers, extension staff, NGOs and input stockists) at a multi-country workshop conducted under NRSP project R8400. Following this workshop the tools were simplified for broader dissemination within western Kenya and further afield (Kenya, Tanzania, Uganda).

2. Credit scheme. The credit scheme has been designed in regular consultation with representatives of the target communities in Western Kenya. Two stock-taking workshops, in late 2002 and in 2005, have provided feedback on the detailed design of the loan product (e.g. loan duration, interest rate, regularity of repayments, group requirements) and on the operation of the scheme more generally. There has also been regular interaction with borrower groups during which these issues have been further discussed. The scheme has been discussed periodically with one commercial service provider in western Kenya, which has also provided training inputs to some borrower cohorts.

We might consider three levels of validation for the credit scheme:
- Firstly, the scheme must demonstrate that it is capable of achieving high repayment rates (95%+), which are necessary for ultimate commercial viability. Over its whole life (including early years of learning through error!), the scheme has achieved a loan repayment rate of 86%. In the last three years, the rate has ranged between 90-100%. Expectations are high for 2006 as the rains have been very good and repayments are proceeding well;
- Secondly, it must demonstrate that these rates can be achieved amongst a large enough number of borrowers to cover (most of [1]) the operating costs of the loans officer. The scheme is not yet scaled up enough either to cover costs or to fully test the capabilities of its "contact person" mode of operation. How many groups can a single loan officer service without sacrificing loan repayment performance in rural areas where transport is poor and if the loan officer interacts primarily with the group contact person? (N. B. This approach is necessary due to the small loan sizes required by very poor rural households).
- Thirdly, the scheme could be operated commercially by a micro-finance company. This has yet to happen as work is still in progress on the first two steps above.

The RIUP would provide an ideal opportunity to achieve further scaling up and thereby validate the credit scheme approach.

[1] The question of subsidy for such a scheme is discussed in response to Q23 below.

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)**.*

Primarily western Kenya (see above).

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 staff of project R7962 continue to administer the SCOBICS credit scheme. The loans officer works with various types of farmer committee or organisation in the areas of scheme operation to ensure the smooth running of the scheme. These include:

- Sub-location or catchment committees. A sub-location is a government administrative unit, but the sub-location committees were set up by ICRAF as channels for disseminating research and extension information on improved fallows and other soil fertility enhancing technologies in the late 1990s. Meanwhile, a catchment is an area defined by the Ministry of Agriculture for purposes of extension planning and may cover part of a single sub-location or may cross sub-locational boundaries.
- Farmer field schools. The scheme works with two groups organised jointly by TSBF and KARI/AHI.
- Farmers' organisations: the relatively large and expanding Tatro farmers' organisation, whose membership is distributed across several sub-locations in two districts (Siaya and Butere-Mumias), and the newer and smaller Wakulima Youth Group.

The decision support tools are used by borrowers within the scheme and also by some neighbouring farmers (non-borrowers).

Through projects R7962 and R8400, various secondary and tertiary stakeholders have been introduced to the decision support tools. The tools are now being used by VI Agroforestry and the Uganda National Farmers' Federation. In western Kenya they are also being promoted within an additional division of Siaya by the World Bank-funded KAPP project, which is also considering ways of building on the project's experience with credit delivery. In Uganda they are available to farmers through NAADS.

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 output are mainly used in the project areas in western Kenya namely villages of Yala division (Siaya district), Emuhaya division (Vihiga district), Matayos division (Busia district) and Sigowet division in Kericho district. However, the decision support tools are now also being used in Uganda.

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

In 2005 the SCOBICS credit scheme served 321 borrowers spread across four districts (Siaya, Vihiga, Busia and Kericho) and had a loan portfolio of just under KShs 1.1million (US$14,250). During the period 2001-05, it served a total of 788 borrowers, of whom 52% were men and 48% women. In 2006 the scheme has a loan portfolio of just under KShs 1.3million (US$17,950).

Demand for the SCOBICS credit project amongst farmers and their partner organisations in western Kenya is very high. However, expansion is currently constrained by limited capital, with the completion of project R7962 and given that the scheme is not yet self-sustaining.

With regard to the decision support tools, an NGO like Vi-Agroforestry can work with thousands of farmers in western Kenya. An institution such as the Uganda National Farmer Federation has national coverage, reaching over 200,000 farmers through 73 members' organisations. However, we do not have data on how many of these groups or members have actually used the decision support tools.

Use of the decision support tools is still spreading. In Kenya, they are being publicised and promoted through the COSOFAP consortium, which currently hosts over 100 partner organisations that are active in western Kenya. These include research and development organizations, International Agricultural Centres (IARCs), non-governmental organization (NGOs), community-based organization (CBOs), Regional Land Management Unit (RELMA), farmer groups and associations.

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 presence in western Kenya of numerous organized farmer groups, sub-location committees, catchment committees and CBOs, networked through COSOFAP, has assisted in both the spread of the SCOBICS credit scheme and the promotion and/or adoption of the decision support tools. The committees have provided an entry point into new communities for SCOBICS. Without these and the information about them provided by COSOFAP, a credit provider would face higher search costs when seeking appropriate areas in which to expand – and possibly also greater costs of farmer mobilisation when there. Conversely, it is possible that the relationships within these committees and groups serve to limit the spread of both SCOBICS and the decision support tools within the wider community.

Two issues are critical for future successes of these groups:

1. Capacity building: areas that need more emphasis include attitude change for the stakeholders, capacity building for farmers and exchange visits between farmers in order to improve the work of farmers.

2. Farmer empowerment: this should assist the groups in lobbying for support from extension services, research organization, policy makers and local government officials. Without pressure from below, coordinated service provision is unlikely to happen for the majority of Africa's smallholder farmers. The gap between existing reality on the ground and policies should be narrowed by creating an enabling environment for policy makers to participate and get involved from formulation to implementation stage of activities

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).***

Research outputs from the project have been disseminated to various primary, secondary and tertiary stakeholders that provide services to farmers in Kenya and Uganda (refer to Project R8400 on "NRSP uptake promotion in East Africa"). About 200 target institutions (100 each from Kenya and Uganda) were selected. The institutions were mainly those with national coverage, operating in several districts in the country, or region of the country and pro-poor in their approach These include:
- Local, national and international NGOs
- Research organizations
- Government departments of agriculture, environment and planning
- Policy makers in local and national level
- Private sector
- Farmer association/organization
- Community based organization

In Kenya demand for these products have stemmed from their use by COSOFAP and partners during training, workshops and trade exhibitions and In Uganda, stakeholders were sensitized through workshops and buy-in meetings.

*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)**.*

Barriers include:

- Sustainable Community based Credit scheme (SCOBICS): Demand for SCOBICS loans amongst farmers in western Kenya is very high. However, additional funding is required to finance the scaling up of the scheme and its validation as a replicable lending approach appropriate for supporting agricultural intensification by poor, semi-subsistence rural households. Were additional funding available, the current project team would seek to partner with an organisation with more extensive general experience in the provision of micro-finance (if not experience specifically with lending for seasonal agriculture), as well as with the Agmark project mentioned in response to Q9.
- Decision Support Tools: Although most farmers who have used the tools claim to have made changes to their cropping system as a result of consulting them, the usage by various stakeholders are constrained by institutional agendas which are difficult to change. These include the fact that most institutions are over reliant on external funding which dictates the products to be delivered to farmers rather than promoting existing products. Extension agents are used to delivering package technologies from above rather than using products from other organizations.

- <u>Seed Supply</u>: Success in agricultural production is embodied in planting seed. Seed needs to be readily available for purchase close to the farm. Whilst local stockists in western Kenya can supply any fertiliser that local farmers are likely to require, some of the most promising seed varieties (e.g. dual-purpose soyabean seed) have not yet reached the stage of commercial multiplication by seed companies. Hence, unless a project is present to make such seed available (e.g. by encouraging farmer-based seed multiplication), farmers are limited in their ability to diversify their cropping system in response to improved information (or even credit). This highlights the need for *coordinated* service provision to African farmers.

*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).***

Given the large number of organisations working on agriculture and rural development in western Kenya, including the considerable funding from Rockefeller Foundation, coordinated service provision is a realistic objective, even given the limitations of the public extension service.

However, wider adoption and effective uptake of either the credit product or the decision support tools requires mechanisms for coordinating the activities of multiple service providers, which is only likely to occur where the state (local government?) takes a lead in working with the private sector to promote agriculture in a particular location.

*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).***

Mechanisms are needed to bring together output buyers, credit providers and seed suppliers (all from the private sector) with researchers and extension workers (mainly public sector) to support farmers in particular communities or districts to intensify their maize production, diversify into higher value products and invest in their soils. The COSOFAP consortium of organisations may be able to encourage the necessary coordination in parts of western Kenya. Alternatively, district development planning processes may offer the most appropriate mechanism for encouraging such coordination. The KAPP project is promoting this approach in Kenya. However, our observation is that this is an issue that has yet to receive serious policy consideration in many contexts.

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.

An impact survey was carried out in 2005 in western Kenya. Out of the eight project areas, three were selected for the survey on the basis that 1) they had the longest history of project activities and 2) they represented fairly

concentrated communities where a control population of similar farmers could be readily identified. Involvement with the full range of project activities (proposed outputs) was closely linked to participation in the credit scheme. Therefore, to assess the impact of project activities, questionnaires were administered to 188 randomly selected households in the chosen areas and also to 94 current or past borrower households within these areas. Information was collected on household membership, assets, agricultural production and other income earning activities. The findings are reported in:

Poulton C, Ndufa J.K, Ogolla G and Maina P 2005 Impact Survey Report. Annex B: Linking Soil Fertility and Improved Cropping Strategies to Development Interventions. NRSP Final Technical Report.

*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)**:*

- *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*

The majority of borrowers interviewed during the 2005 impact survey in western Kenya reported a positive impact on their livelihoods from access to credit and participation in other project activities (e.g. use of decision support tools). Farmers have improved their knowledge base for their decision-making on crop soil fertility management and have made changes to their cropping systems. These changes have enhanced household food security and increased income from crop sales.

Impact on human assets – improved food security
The impact survey showed that households that borrowed from the credit scheme achieved higher yields than those that did not. Average yields for borrowers and non-borrowers in the main growing season were 1380 kg/ha and 700 kg/ha respectively. Analysis of the data using a regression model concluded that, holding other factors constant (including wealth, landholding and gender of head of household), accessing credit enabled households to raise maize yields by around 600 kg/ha. Moreover, 69% of borrowers claimed an increase in maize yields over the past four years compared with just 11% in the non-borrower group. The survey also showed that borrower households produced, on average, enough maize to feed themselves for seven months of the year compared to five months for non-borrower households.

Impact on financial assets – increased cash income
Almost all respondents agreed that access to credit through the scheme had increased their household's agricultural production. Over 70% of borrowers claimed to have increased their incomes through crops sales as a result of their loans.

Impact on natural assets – investments in soils and farm
Out of 80 respondents who claimed to have seen one of the decision support tools, 63 claimed to have made a

change in their cropping pattern based on it. Of these, 56 reported benefits from having done so: principally better soil fertility, higher yields and greater income from farming.

Borrower households were found to be more likely to diversify into new crops; 59 % of borrower households had introduced new crops since the beginning of the project compared with only 16% of non-borrower households.

<u>Who has been reached?</u>
The impact survey showed that project outputs had reached predominantly, but not exclusively, the "moderate poor". They are in groups and they have been ready to adopt new crops and varieties to improve their livelihood. Above all, they have some stability in their income flows (either through better agricultural practices and slightly larger farm plots or access to employment or remittances) to enable them to take on the liabilities associated with credit.

Of the 94 borrowers surveyed, just under 30% came from the lower quartiles (3 and 4) of the wealth ranking. This corresponds to the "assetless (or near assetless) male & female headed households in rural areas" within the "extreme vulnerable poor" poverty grouping. Participation within the credit scheme by widows reflected the proportion of widows in the wider community; however, the data suggest that participation by this group of households came largely from the better-off.

Potential benefits for extreme vulnerable poor groups are discussed in response to Q22.

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.

Farmers participating in the project have been able to increase their investment in the fertility of their soils, principally through increased use of inorganic fertilizer and the cultivation of dual-purpose soyabeans.

The decision support tools stress the benefits (biophysical and financial) of combining organic and inorganic techniques for soil fertility management.

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

None anticipated.

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)**

The outputs clearly have the potential to increase farm household incomes and food security. Increased income should increase households' resilience and reduce their vulnerability to outside shocks. At the farm level increased diversification in cropping patterns (as seen in borrower households) can reduce the vulnerability of households to specific, adverse weather events. In particular, alternative crops such as dual-purpose soyabeans are more suited to the relatively more risky short rains than maize. Diversification can, therefore, safeguard farm productivity in years of poor rainfall. At present farmers plant land to maize during both rainy seasons in a bid to improve food security. With higher yields from maize during the long rains this is no longer necessary; thus enabling 'safer' cropping in the short rains.