

Information market place gives farmers access to the knowledge they need

RIU

Validated RNRRS Output.

National Agricultural Advisory and Development Services (NAADS) in Uganda are finding it easy to get their hands on relevant up-to-date information that addresses farmers' problems thanks to the MPAIS Portal. This privately operated web-based market place for agricultural information makes existing extension materials readily accessible. It acts as a virtual trading environment for agricultural information and market service providers in Uganda. The service providers received training in information management and tailored the content to benefit poor households in the pilot districts in Uganda. New users from other districts are coming on board, and several countries in the East African region have shown interest in joining the MPAIS Portal.

Project Ref: **CPH43:**

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

Lead Organisation: **NEDWORC Foundation, The Netherlands**

Source: **Crop Post Harvest Programme**

Document Contents:

[Description](#), [Validation](#), [Current Situation](#), [Current Promotion](#), [Impacts On Poverty](#), [Environmental Impact](#),

Description

CPH43

Research into Use

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Geographical regions included:

[Uganda](#),

Target Audiences for this content:

[Processors](#), [Traders](#),

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.

A MARKETPLACE FOR AGRICULTURAL INFORMATION SERVICES (MPAIS) IN UGANDA

MPAIS

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

Crop Post harvest 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.

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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.

Problem the output aimed to address:

NAADS (National Agricultural Advisory and Development Services) is one of the core programmes under the Plan for the Modernisation of Agriculture (PMA) envisioning “a decentralised, farmer-owned, and private sector serviced extension system contributing to the realisation of the agricultural sector objectives.”

This will be pursued through “increased farmer access to information, knowledge and technology through effective, efficient, sustainable and decentralized extension service with increasing private sector involvement”. Key objectives of NAADS are 1) decentralising financing of extension service to sub-county level and 2) creating an effective demand by farmers for advisory services provided by private ‘NAADS Extension Service Providers’.

NAADS Service Providers with a service contract need relevant up-to-date information that addresses the farmer’s problem(s) and will have to communicate solutions in an appropriate format to the farmers. Reviews indicated that NAADS Service Providers do not have access to high quality science-based technical information and consequently the quality of services provided is not optimal.

Reasons for this are manifold and include:

- § Lack of knowledge on the source of information/technology
- § Limited funds to get information and technologies
- § Limited capacity of the service providers to use the internet.
- § Lack of libraries and/or agriculture resource centres at the districts.
- § Limited access to the internet
- § Long distances to sources of information and technologies.
- § Most research stations/information centres are far from the stations of service providers. It is costly and time consuming to travel and collect the information/technology from the stations.
- § Unavailability of adequate information from local sources on some commodities such as apiary and vanilla
- § Poor linkages of the service providers with research stations.

Next to the lack of access to appropriate information NAADS Service Providers indicate that they face other constraints that hampered their work

- (i) *Institutional* - adverse perceived risk/benefit ratio for service providers;
- (ii) *Infrastructural* - high transaction costs due to lack of market infrastructure;
- (iii) *Capacity* - lack of capacity to utilise existing information sources for the benefit of rural communities.

The NAADS service providers have a high demand for repackaged extension materials and/or technical information for research for the preparation of the extension services. At the supply side relevant technical information and repackaged extension materials are available at a number of institutions. This is primarily within NARO, the University sector and larger NGOs that are located in and around Kampala whereas as the NAADS Service Providers are based in the districts outside the capital.

The MPAIS project set out to explore possibilities to use ICTs to make existing information more easily accessible and provide a **market place** for offer-demand for **information extension products and services**. The MPAIS portal was created to serve that purpose: it is a **privately operated market place** for **agricultural information services** matching supply by information providers and demand for packaged extension information material and related services by NAADS Service Providers.

Outputs

- Knowledge among project partners about the **institutional arrangements** required to ensure CPH information services markets in Uganda operate effectively for the benefit of the poor.
- Service providers **trained in information management** and provision of services to operate effectively in CPH information markets.
- Pro poor CPH **information content** available to service providers in 4 districts
- A functioning pilot **web-based information services portal** providing a forum and clearing house for seekers and providers of CPH information services.
- Knowledge about the performance and technical and institutional **sustainability** of a **public/privately funded web-based CPH information services portal**.
- Awareness** among government institutions, NGOs , private service providers and farmers about the possibility of using ICT for a market place for offer-demand for information extension products.

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 project dealt with information and services about different commodities. The web-based Portal can be used for all commodities.

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 cutting	Cross-cutting
X	X	X	X	X	X	X	X

The web-based Portal can be used for all production systems and cross-cutting issues.

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	X	X	X

The web-based information services Portal can deal with information and services of all types of farming systems.

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.

In the MPAIS project Internet Technology has been used to facilitate demand and supply of products and services for the identified user groups: NAADS Service providers, Agricultural Information Suppliers and Market Service providers. Person to Person communication in this pilot project was not part of the Internet technology used apart from the option for users to send emails to each other at the Portal. By providing contact details (including telephone numbers) of the buyers and sellers the users could contact each other by phone to negotiate on products or services offered or requested. These negotiations took place outside the Portal, but during the trial an agreed 'transaction' was recorded at the Portal.

There is scope for application of additional Information and Communication Technology. As Internet-speed and coverage will improve in the coming years, interaction between stakeholders will increasingly be feasible using the Internet. The Portal internet technology as used in this MPAIS pilot project (website, search functionality and database) can be combined with other web-based communication tools such as e.g. chat boxes, forum, video-conferencing, interactive websites, blogs and other Web2 tools. The Internet tools can be combined with communication means especially mobile phone services incl. sms and conventional modes of communication such as direct interaction, phone/ mobile services, extension services including drama, video and radio services, field demonstration activities, action research etc to guarantee that also the last miles in connectivity and access are being bridged.

Combined use of web-based communication tools and a repository are demonstrated in several multi-stakeholder initiatives that like MPAIS use the InfoBridge database such as

§ **TeleSupport Network- India** (www.telesupport.org). Project partners are Nedworc Foundation, the Natural resources Institute (UK) and Indian partners RASTA, CASA, DDS and Change Initiatives,

§ **Farmer Field School Network**- Global (see www.farmerfieldschool.net). It has an own FFSnet View (www.infobridge.org/ffsnet). The FFSnet Foundation works together with InfoBridge Foundation.

The open-access shared InfoBridge Database is used as a common repository for various types of information including reports and (scientific) publications to Good Practices and Lessons Learned from the other RNRRS projects - available and easily accessible at the Internet. It also links to the organisations, experts projects involved in the programs. The information of NRSP of over 1,000 publications, mostly in full text, together with participating experts and organisations is already stored in the InfoBridge database. It can be used by the MPAIS stakeholders to provide relevant content and thereby directly improve the extension services of the NAADS Service Providers. In addition also other formal and informal networks use the InfoBridge database and have added content, so that in total over 6,000 knowledge items are available including videos on Good Practices. Combining outputs of various programs creates a strong knowledge base accessible to all programs that deal with problems of rural poor. These are generally cutting across disciplines and programs. The platform is set-up in a relational manner meaning that for each item like project, expert, organisation or publication a profile is built up thereby strengthening the amount and quality of information available.

The advanced Internet Search Tool at the MPAIS portal, brought in by Source KM, facilitates direct searching for NRSP publications and publications at other selected web sites and web resources next to Search options within the MPAIS portal itself.

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).

During this pilot project of less than one year a limited three-month trial of the MPAIS web-based agricultural information services market took place. The initial period was used to identify user needs and develop and customise the tools and train participants. The Portal and its institutional mechanism were evaluated by the users of the MPAIS Portal over a 12 weeks period.

The trial involved 30 NAADS Service Providers from four districts in Central and Eastern Uganda: Mukono, Iganga, Soroti and Tororo, 13 Agricultural Information Suppliers and 6 Information Market Service Providers (Internet cafés). Most of the trial participants were able to attend one or both of two training workshops held prior to the trial. These covered general online information management training and specific use of the MPAIS portal. Additional training activities were held for NAADS Service Providers during the course of the trial in each of the four participating Districts.

The MPAIS trial was managed locally by the project partner 'Africa 2000'. This included member registration, issuing and accounting for user credits, helpdesk activities, user training and general coordination and took place over 12 weeks (September-December 2005).

The objectives of the MPAIS Trial were to:

- § assess the viability of using a web-based platform for trade of agricultural information products and services for rural users in Uganda
- § evaluate the market response to a demand-stimulus via the portal, combined with training and other supporting institutional arrangements
- § Elucidate the governance & financial model needed for sustainable operation of the market place, including applicable Codes of Practice and related standards/guidelines.

Prior to the trial a stakeholder workshop was held in which participants discussed and agreed a Memorandum of Understanding (MOU). This deals with the format and organisation of the trial and included a Code of Conduct covering obligations and responsibilities of the participants. An MPAIS Working Group was also appointed, with participation from each of the user types. The Working Group met twice during and after the trial with terms of reference to represent the wider user group, liaise with the trial management, monitor compliance with agreed trading standards, and oversee the evaluation process.

The agreed approach to the trial was as follows:

- NAADS Service providers were 'issued' with Ug Sh 36,000 (approx USD20) worth of electronic credits on the portal at the start of the trial. They were encouraged to spend these credits on products and services available via the portal. Additional credits could be purchased from the trial managers at a 50% discount off their money value.
- Internet cafes (at least one in each District) were involved in the trial and encouraged to offer internet access and training in portal use to participating NAADS Service Providers, in exchange for credits.
- Suppliers of information products and services were entitled to either re-spend these credits on the portal, or cash them in at the end of the trial against any verified transactions.

Participants made a commitment to keep proper records and to adhere to appropriate trading standards governing the description of products and services, pricing, product quality, fair and accurate ratings and reviews, and customer service.

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 MPAIS project was implemented from March – Dec 2005. The validation took place from September – November 2005 in 4 districts in the eastern part of Uganda: Mukono, Iganga, Soroti and Tororo.

The trial involved 30 NAADS Service Providers from four districts in Central and Eastern Uganda: Mukono, Iganga, Soroti and Tororo; 13 Agricultural Information Suppliers and 6 Information Market Service Providers (Internet cafés), also participated.

The Pilot MPAIS portal main objective was bringing together demand and supply in provision of extension materials that could be used in NAADS contracts in the 4 districts.

The demand side focused on demand-led requests from NAADS services providers for extension materials for use in NAADS contracts, while the supply side offered available repackaged products and services with special reference to crop post-harvest problems. The requests and offers of products and services dealt with production and farming systems prevalent in the above mentioned 4 districts in Uganda.

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 MPAIS Pilot Portal is still being used by the original user group. New users have been invited by the present Portal manager NIDA-Uganda with support of a small grant of NAADS. However the pilot project was a test and only focused on a user groups in 4 districts. Although the NAADS Programme has shown keen interest in the initiative, additional funds have not yet been released to expand the project to other districts 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).*

At present the MPAIS portal is only used in Uganda, as the portal was developed for a specific use within the NAADS programme in Uganda. This prototype MPAIS portal provides a virtual trading environment for registered agricultural information suppliers, other information market services providers, and NAADS Service Providers in Uganda.

However several countries in the East African region showed interest in the MPAIS Portal at meetings and seminars where the MPAIS Portal was presented.

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

The pilot MPAIS Portal was developed and tested in a pilot project of less than one year. After the pilot project ended, the management of the MPAIS Portal was transferred from Africa 2000 Network, the Portal manager during the pilot project, to Nkoola Institutional Development Associates (NIDA), Uganda, as Africa 2000 network did not have the personnel and resources to continue with the management and support services for the MPAIS portal. NIDA as the current MPAIS Portal Manager has invited new users to participate and provided the necessary support services to the new user group.

Despite the interest of the NAADS programme to introduce the MPAIS Portal in other districts of Uganda, no funds have been released for upscaling. Therefore the use of the MPAIS Portal is still at the relative small scale of the 4 original districts in Uganda. At present NIDA tries to start up activities in a new district close to Kampala with a (small) grant of the NAADS programme.

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 MPAIS project suited well with the policy objective of enhancing efficiency of the extension service. An institutional framework was created by the Ugandan partner Africa 2000 and is further expanded by the current manager NIDA. Awareness raising activities were carried out in collaboration with the NAADS programme. The project paid ample attention to involving stakeholders in developing the MPAIS portal so the pilot system was user-oriented. The project also had a capacity building component on web-based information management and adequate support was provided in the set-up and test-phase.

Use was made of proven and functioning technologies, i.e. the InfoBridge platform and SourceKM Search Tool, so that the MPAIS portal was developed in the relatively short time available.

Promotion was included in the activities of the project and the MPAIS Portal was presented in several seminars in Uganda during and after the project in 2005 and 2006. In March 2006 a policy brief has been prepared by the above mentioned partners to actively promote the MPAIS Portal in and outside Uganda.

NIDA, InfoBridge Foundation and Source KM have presented the MPAIS Portal initiative as a case at various (inter)national seminars of other ICT4D projects and mention the MPAIS Portal and pilot project at their websites.

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).

Main promotion for the MPAIS portal takes place in Uganda as the Portal is linked to NAADS programme and its main stakeholders.

The InfoBridge database, which used as a back-end repository for the pilot MPAIS portal, has a broader application for a range of development and research organisations and networks. This web-based portal is being promoted by InfoBridge Foundation and Nedworc Foundation since 2004. Several new initiatives have been implemented since including the MPAIS Portal.

Key organizations/networks that use the InfoBridge database as a web-based repository are:

1. **Natural Resources Systems Programme (NRSP)** uses the InfoBridge database for their project database (www.nrsp.org)
2. **TeleSupport network** (India-Bangladesh-UK-NL) uses the InfoBridge database to store its information on Good Practices, publications, and network partners (www.telesupport.org)
3. **Dhaka Ahsania Mission** (Bangladesh) uses the InfoBridge database to store its publications on non-formal education in Bangladesh (www.infobridge.org/dam) and will setup a new web-based Portal for their local information sharing programme 'Ganokendra.info'.
4. **Farmer Field School Foundation** (Netherlands) uses the InfoBridge database for sharing information on FFSnet publications, its global network FFSnet and a first national sub-network in

Kenya (Kenya-FFSnet) (www.infobridge.org/ffsnet). Other sub-networks will follow in the near future as the network expands rapidly.

5. Recently other parties have shown keen interest to use the InfoBridge database as a shared repository including PELUM, a network of 160 East African NGOs, the Zambian National Agricultural Research System and CGIAR related networks. The InfoBridge database shows an increasing use and is searched by over 4,000 people monthly with 150,000 hits / month.

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).

Main barriers that hamper the adoption of the MPAIS Portal as an agricultural information services market in Uganda, are identified as follows:

1. Rural ICT Infrastructure and capacity

A significant group of mainly NAADS Service Providers faces constraints relating to ICT infrastructure and skills, either at their own facilities or at Internet Cafes: old software used; loss of connectivity, internet speed; hardware failures; power failures; high internet costs; lack of skills with use of computers and internet.

However several initiatives are under way to improve rural access.

2. Policy issues

- The scale, nature and sustainability of the market opportunity created by the NAADS reforms is opaque and uncertain;
- Infomediaries face an apparently uneven playing field, already populated with public operators such as NGOs either supplying information products for free or at sub-commercial rates; the competition can be overcome by providing efficient and effective service in terms of quality and speediness for which farmers are willing to pay.
- Lack of any clear national strategic framework in which the comparative advantages of both public and private operators can complement each other. At the same time the private market is fragmented and disorganised and has no collective voice to engage and negotiate with the public sector.

§ (Some) public agencies appear to lack confidence and trust in the market as a mechanism to supply research-based technical information to NAADS Service providers and their client farmers.

There are concerns about how quality standards would be maintained and consumers protected in such a market, and how the intellectual contribution of public sector researchers would be acknowledged and adequately protected.

§ Although the NAADS Programme, in decentralising purchasing power through to sub-country level, has created a powerful demand-side stimulus on the agricultural advisory services market, the necessary conditions for a supply response from private sector information service providers are not currently in place.

§ Continuing reliance on a small number of public research agencies and project-financed NGOs to deliver the information products and services.

§ Lack of funds to introduce the MPAIS system in other districts.

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).

Changes needed to remove/reduce the barriers to adoption of an up-scaled MPAIS portal are:

1. Permanent MPAIS Web Portal

A robust and scalable technical platform with secure e-commerce capability and long term arrangements in place for site maintenance, and technical development to meet evolving user requirements (portal management arrangements are discussed below). Linking to information repositories would facilitate provision of effective and high quality information products

2. Credit mechanism for Agricultural Information and Services

The credit mechanism is effective in introducing liquidity to the market, that can be used by the participants to finance training and other business development services, it also leverages private investment in improved capacity as well as the development of improved market institutions e.g. for governance and self regulation

3. Capacity building

The training and service requirements needed include improved ICT skills, skills in information management and designing/packaging information for the market, and business development services to improve capacity to identify market opportunities and effectively fulfil customer requirements.

4. Market expansion

Future market expansion requires that new private sector entrants are also able to operate profitably in the market to increase diversity of choice and lower costs to consumers. This could be achieved by allowing MPAIS to expand beyond its current restricted target consumer group (the NAADS Service Providers) and begin to offer products and services to a wider range of organisations in the market for agricultural information products and services.

5. Development of Market Institutions

The MPAIS Working Group could act as a model for an expanded MPAIS Association or similar body with a mandate to support it's members, foster growth and development of the market, sets trading standards and Codes of Practice, and lobby for financial support and policy change.

The further development of MPAIS will need a MPAIS Coordination and Portal Management Unit that should be privately operated, but could also act as an interface and conduit between the privately operated market (through the MPAIS Association) and relevant public sector bodies.

6. Active Role of NAADS

NAADS Secretariat is recommended to identify and assign responsibility and resources to take forward a package of support measures as described above to establish the MPAIS Portal, stimulate demand, strengthen institutions and improve market coordination within a coherent and well publicised programme that will reduce uncertainty and risks for private operators.

7. Awareness and promotion at the policy level through the project to create a level playing field for information service producers.

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).

The beneficiaries of the establishment of the MPAIS Portal are the poor small farmers (groups) in Uganda that request support (i.e. extension services through the NAADS Programme) to cope with problems that they encounter within their farming system. They will benefit from the improved quality of the extension services of the NAADS services providers in the districts in Uganda

The present MPAIS Portal has the following user groups in 4 districts of Uganda:

§ NAADS Service providers that based on the clear demands for services identify information resources and produce products that are targeted to end-user needs

§ Agricultural Information Suppliers (universities, NARO research institutes, NGOs)

§ Information Market Service Providers (e.g. Internet cafés and consultancy firms providing training services).

These three groups are the primary stakeholders of the MPAIS Portal and directly benefit from the establishment of the MPAIS Portal.

Information Suppliers and Market Service Suppliers will be able to offer their services and products at the Portal. Improved access to demand-led, repackaged and tailor-made extension materials of Information Suppliers will give the NAADS Service Providers the necessary support and tools to provide high quality extension services to small farmers groups.

Firstly the use of the MPAIS Portal needs to be expanded to all other districts in Uganda. In addition the changes proposed under Q18 to improve the MPAIS Portal and stakeholder performance need to be implemented. Thereby a large number of farmers in Uganda can benefit in a relative very short timeframe from the improved extension services of the NAADS Service Providers.

Special attention should be given to the following supporting activities:

1. Continued capacity building for intermediaries (within the private sector, NGOs and government institutions) in repackaging science-supported information to suitable extension materials (e.g. multimedia materials) that are suitable to inform small farmers on good agricultural and natural resource management practices
2. Last mile solutions to facilitate continued communication between farmers, intermediaries and experts: e.g. through Question & Answer Services and feedback mechanisms to assure continued interaction and communication between all stakeholder groups (see also the TeleSupport project: www.telesupport.org).

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.

There have been no formal poverty impact studies in relation to the MPAIS project. The MPAIS Portal can be considered as an ICT for Development activity. Studies have been carried out on impact of ICT4D activities on poverty and other Millennium Goals. These studies have shown that ICT for Development do have an impact on poverty, mainly through promoting opportunity and facilitating empowerment.

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 MPAIS project was a pilot project in Uganda to evaluate the role and potential for a privately operated web-enabled market for agricultural information services, operating between the supply of science- based information from research organisations, and the demand for packaged extension information materials and related services by NAADS Service Providers.

In total 94 requests for products or services were made during the 3-month trial period by the service providers and 148 products and services were offered by the information suppliers and market service providers. In the short time span of the test phase 3 months results at end-user level have not been recorded. This testing phase was planned to set up and test the MPAIS system.

M&E of the results and the impact was foreseen to be part of the follow-up activities. The MPAIS Portal and the products sold at the portal were generally highly appreciated by participating service-providers.

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 (World Bank) environmental analysis report of the NAADS programme indicated the positive effects of the NAADS programme. The NAADS Programme assist poor farmers in Uganda, in becoming aware, and be able to adopt improved production, methods and management practices in their farming enterprises.

Several positive effects can be distinguished:

1. reduction of over use of pesticides and fertiliser in certain production systems through more accurate and timely information as well as offering alternative, more environmental friendly methods
2. reducing soil erosion by offering advice on soil fertility improvement
3. increasing water availability by offering advice on measure to reduce water run-off, and increase water infiltration
4. offering advice on a more balance genetic base for production of crops, forestry and animal production
5. the increased productivity will slow down the rate of deforestation and use of marginal lands

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

No negative impact is know or expected. The fully functioning MPAIS Portal will facilitate the implementation of

the NAADS programme.

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)

Uganda is prone to various natural disasters. Water-related disasters, such as droughts, floods, landslides, wind storms and hailstorms contribute to well over 70% of natural disasters in the country and destroy an average of 800,000 ha of crops annually, causing economic losses in excess of approximately US \$65 million. Large-scale atmospheric events, such as El Niño and La Niña, are identified as the principal causes of the most severe water-related disasters in Uganda. The vulnerability of many Ugandan communities to water related disasters is growing due to many undesirable human activities such as deforestation, ecosystem degradation, environmental pollution, social unrest, transport accidents, urban and wild fires and poor land use in many parts of the country.

The MPAIS program empowers farmers and farmer groups to express their demand and uses ICT for this .It increases their awareness about possible solutions to daily problems as well as raises awareness about environmental threats and possible solutions. The MPAIS system has a link to the InfoBridge database that offers a large reservoir of options to make farming systems more sustainable and resilient to climate change. Especially the anticipated use of dialogue tools which enhance 2-way communication with experts and farmer-to-farmer discussions that leads to improved livelihoods.

The MPAIS Portal aims at increasing the sustainability of rural livelihoods in Uganda through improved advisory services to farmers. The MPAIS Portal will deal primarily with sustainable solutions for direct problems of farmers. However the Portal may also offer additional information and good practices that improve the capacity of the farmers to adapt their agricultural practices to changing climatic and environmental circumstances and to cope with and or withstand the hazards. Better decision-making, improved planning, effective risk management, innovation in agricultural production and environmental protection are activities that can reduce the vulnerability of communities to climate change and natural disasters.