# POST PROJECT ASSESSMENT OF NARO - IDRC PARTICIPATORY DEVELOPMENT COMMUNICATION INITIATIVE IN UGANDA

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## Abstract

*Participation continues to be a catchphrase in current development jargon, but its genuineness largely depends on the power holder who is the main architect in deciding the mode of its implementation. Banana scientists from Uganda's National Agriculture Research Organisation (NARO) used participatory development communication (PDC) to share information for the improvement of natural resource and banana management in two farming communities in central and southwestern Uganda, between 2001 and 2007. The objective of the NARO – IDRC Initiative was to ascertain a two way information communication methodology that could result in small scale farmers' sustainable adoption of researched agriculture information and technologies. The researchers later reported farmers' improved livelihoods, long term utilization, adoption of disseminated information, and improved banana yields. They largely attributed the changes to the participatory mode of information dissemination in the project. But how sustainable were the changes? This report originates from a post project assessment that was carried out in 2011, four years after closure of the NARO – IDRC intervention, with the overall objective of establishing the eventual outcome of the earlier reported results. It highlights the implementation process of the NARO – IDRC intervention, reviews the status and culmination of its earlier reported changes among the farming communities, and illustrates the interaction of local factors with the process of information dissemination.*

**Key words:** *Participation, Information Dissemination Communication, Sustainable Agriculture, food security, post project assessment*

## Introduction

Banana researchers from Uganda's National Agriculture Research Organisation (NARO) with IDRC financial and technical assistance utilized participatory information sharing as an alternative information dissemination approach to address natural resource and banana management farming challenges in two farming communities located in central and south western Uganda (see Figure

1). This took place between 2001 and 2007. Before the intervention, banana farmers and researchers were challenged by effects of poor natural resource management, diseases like Banana Bacterial Wilt (BBW), and researched information that was availed to farmers but did not lead to desired results. At that time, researchers disseminated information to farmers using top down information dissemination approaches without success. Researchers indicated that farmers used to take up the disseminated information, but used it for only short periods after which they reverted to traditional but ineffective farming information and practices. The NARO – IDRC intervention availed the same researched information to the same farmers through participatory information sharing. They later reported farmers' sustained utilization of researched information leading to improved banana yields and farmers' livelihoods. The researchers suggested that the participatory mode of information sharing contributed to the positive impacts of the intervention. But how sustainable were those impacts? This report presents an assessment that was carried out in 2011, four years after the NARO – IDRC intervention. The overall objective of the assessment was to establish the long term outcome of the reported changes, to find out if they still existed.

## Background

This presents the setting, theoretical context, literature review, and the NARO-IDRC intervention's methodology.

### *The setting*

Uganda is an agricultural country in which agriculture provides food, market and raw materials for industries. The majority of Uganda's population (86%) lives in rural areas where the agriculture sector employs 77% of the active labour force, and 96% of the population below the poverty line lives. Percentage of GDP generated from agricultural activities by 2000 was 42.5%. According to the Ministry of Finance, Planning and Economic Development (MFPED, 2004) Agriculture is of high priority because agricultural growth is critical to poverty reduction and rural development in Uganda.

Leliveld et al., (2013) point out that Ugandan agriculture is largely rain – fed, and is basically small holder agriculture in which low cost inputs and traditional labour intensive farming techniques are applied. There is inadequate investment by private and public sectors, rudimentary technology based on hand hoe, low yielding seeds, poor land utilization, unreliable marketing systems, and high pre and post harvest losses. Most rural families live in isolation on small farm plots. NARO (2001) states that small scale farmers are generally cautious in adopting new technologies without proven tangible results. The State of Environment Report for Uganda (2008) indicates that due to small scale

farmers' poverty, they can hardly implement recommended agricultural practices that require financial input.

The above partly explains the reported small scale farmers' non utilization of agricultural technologies. Katungi (2007) asserts that farmers' adoption rate of scientific technologies stands at 30%. This meager picture is not very different from that of Leliveld et al., (2013) which reports that adoption rates of new technologies among Ugandan farmers are generally low, except for maize (50.1%), ground nuts (20.4%), beans (12.1%), and cassava (9.4%). According to UNIFFE (2002), Uganda's search for an agricultural information dissemination strategy dates back to colonial times, but despite some success in Uganda government's efforts, poverty continues to be a major political, social and economic constraint.

***Theoretical context***

Over the years, information dissemination during the implementation of development initiatives has tended to mirror global views of development communication. According to Waisbord (2001) there are two core development communication approaches. Those under the dominant paradigm which argue that the problem of underdevelopment is lack of information that could be solved through top-down one-way mode of information dissemination, and the critics of the dominant paradigm for example Freire (1976), who contends that under development is caused by power inequality and consequently promote participatory communication approaches.

Whereas communication and information theories under the dominant paradigm advocate for provision of information from a sender to a receiver in linear unidirectional manner, those under the participatory paradigm advocate for horizontal and bottom-up information sharing. The modernization, top-down approach to development also known as the dominant paradigm, has been criticized as being ethnocentric (conviction of one's cultural superiority) and paternalistic (telling people what is best).

According to Nkosi and Boon (2009), Development Communication models can be divided into the following five broad categories: Information – dissemination models, these mainly use mass media to persuade and to transmit information; Innovation – dissemination models, these aim at promoting the practice of standard techniques, these models involve transmission of information to farmers by a resource person; Grassroots awareness raising models, these promote a search for ways to take control of the mass media by the most disadvantaged in the communication process; Development support communication models, these were developed by FAO, they are very interactive and participatory, they aim at supporting a specified development programme;

Participatory models, these aim at facilitating communities to take part in the entire development process.

Black (2009) in a review of extension methodologies indicated that no one single approach, methodology or model may address all that is needed from an information dissemination strategy. Black explains that whereas linear top down models have been criticized, they avail reliable scientific and professional information to farmers, while bottom up participatory approaches mobilize farmers to take part in development processes, and new ICTs provide avenues for informing, educating and training farmers. Each of them cannot work singly; it needs to be supplemented by the other information sharing avenues.

Before NARO – IDRC intervention, banana scientists in Uganda utilized top down development communication models for information dissemination, but they did not achieve desired objectives. Participatory communication facilitated researchers to achieve the desired objectives. But there was still need to establish the longevity and sustainability of the achieved desired changes.

***Literature review***

The review highlights government's efforts to improve Uganda's inadequate agricultural information dissemination (extension) scenario, the ongoing search for an appropriate approach through which to share information between technocrats and small scale farmers, which gap the NARO – IDRC intervention also investigated, and illustrates the interaction of information dissemination process with factors in a local context.

According to Uganda National Farmers' Federation, UNIFFE (2002) Uganda's search for an extension strategy dates back to colonial times. In the 1950s until Uganda's independence in 1962, British Colonial Office policy encouraged the development of co-operatives. This was for the purpose of facilitating subsistence farmers to partially change to selling their crops which were principally coffee, cotton, tobacco, and maize. Uganda Cooperatives Alliance (UCA) was formed in 1961 by cooperatives unions to act as the apex body of the cooperative movement in Uganda. As one of its development activities, UCA promoted information and technology transfer with the objective of raising productivity and income of small scale producers. Cooperatives ably availed agricultural related services to farmers till the mid - 1980s when the majority of the cooperatives failed due to political instability, liberalization of markets, and mismanagement. A few cooperatives survived. Currently, there are attempts to revive cooperatives in Uganda.

Semana (2010) reports that agricultural information dissemination in Uganda has gone through various phases since colonial times. Between 1898 – 1907, there was importation of cash crops like coffee, cotton, rubber and tobacco. In

addition, there was establishment of research stations to carry out agriculture and forestry. 1920 – 1956, extension was effected through chiefs. At that time, emphasis was put upon the distribution of planting materials and the dissemination of simple messages on how to plant those crops. It was coercive extension rather than educative.

From 1956 to 1963, agricultural information dissemination took place through progressive farmers; up till 1971, there was duplication, and confusion as agricultural services mushroomed in parallel ministries and organizations. Between1964 – 1972, farmers were assisted through education; 1972 – 1980 was a dormant and non-directional extension phase during which the lack of an agricultural extension policy led to disorganization of extension services, accompanied with low productivity. 1981 to 1991 was a recovery period; there was rehabilitation of the infrastructure and restoration of basic services.

After 1991, the government of Uganda attempted to correct the extension services' duplication by uniting them. The unifying attempt was characterized with merging the Ministry of Agriculture and the Ministry of Animal industry and Fisheries into what is now called the Ministry of Agriculture Animal Industry and Fisheries (MAAIF), with a single chain command. The agriculture extension worker from MAAIF was responsible for teaching and advising farmers. There was farmer oriented programme planning, bimonthly training workshops and supervised farmer training and visits (T&V). Between 1992 and 1997 there was farmer education amidst radical reforms, decentralization, liberalization, privatization, restructuring and retrenchment in a bid to downsize the extension workforce. This resulted in low morale of extension staff. The situation was aggravated by the lack of capacity in the district(s) to manage extension services.

Since early 1980s Sub Saharan Africa has been subjected to structural adjustment programmes meant to reorient African economies to the market. In the Agriculture sector, the reforms are aimed at liberalizing market factors, removing tariff and non – tariff barriers, and removing export taxes. Institutional changes are ongoing for example privatization of government enterprises and handing over responsibilities to the private sector. In Uganda, one of the initiatives undertaken by the private sector was to dissolve the agricultural extension directorate of MAAIF and to hand over the duty of agricultural advisory services provision, to local governments.

Some of the structural adjustment programmes in Uganda are the Poverty Eradication Action Plan (PEAP), Plan for Modernisation of Agriculture (PMA), and the National Agricultural Advisory Services (NAADS). The PEAP, a long-term strategy that provides a comprehensive framework for national planning and multi sector engagement, was established on the following four pillars;

creating a framework for economic growth and transformation; ensuring good governance and security; increasing the ability of the poor to raise their incomes; and improving the quality of living of the poor. Agriculture lies within the pillar that underlines the fact that most Ugandans are self-employed, mainly in the agriculture sector, and the need for both higher agricultural growth rates, and non - farm employment in rural areas to attain sustainable poverty reduction.

The Plan for Modernisation of Agriculture (PMA) was conceived in 2000, as a multi - sector strategy aimed at eradicating poverty through a profitable, competitive and sustainable and dynamic agricultural and agro – industrial sector. MAAIF (2000) indicates that PMA specifically addresses factors that undermine agricultural productivity namely; poor husbandry; low use of improved inputs; limited access to technical information and advice; poor access to credit; poor transport; communication and marketing infrastructures; and insecure land tenure and user rights. PMA indicates that agricultural research should be farmer oriented and farmer driven, and that private sector funding should be increased for it. The PMA has seven priority pillars one of which is the National Agriculture Advisory Services (NAADS). PMA recommended that the government should formulate an extension policy that will be efficient and be private sector based, and that government should increase its annual spending on extension services to poor farmers.

According to Kavuma (2001) the National Agriculture Advisory Services (NAADS) is a Uganda government agency that was created in 2001 with the aim of improving rural livelihoods by increasing agricultural productivity and profitability. NAADS aims at being an efficient, effective and sustainable agriculture advisory service, responsive to farmers' needs, and owned by all stakeholders. It aims at engaging farmers into critical thinking regarding their agricultural endeavours, and the management of farms as a business rather than simply delivering information and inputs for their own sake. The underlying principle of NAADS was to be responsive to the needs and demands as identified by farmers themselves who then determine the work programmes and activities of advisors, that is, from service driven extension, to demand driven extension services.

Friis – Hansen (2005) asserts that whereas advisory and information services for farmers are some of the key components of NAADS, technology generation, enterprise development and market linkages are NAADS key outputs aimed at eradicating rural poverty in Uganda. According to NAADS (2011) the Executive Director of NAADS Secretariat explained that NAADS is often challenged by the rapid succession of policies. Kavuma (2010) maintains that NAADS has been dogged by alleged shortcomings such as slow spreading as it targets few individuals instead of whole villages, classroom training approach,

only benefiting wealthier farmers, and there being no difference in agricultural performance between NAADS farmers, and other farmers. This lack of difference among farmers was attributed to NAADS farmers not implementing NAADS scientific recommendations.

Various ventures have been implemented to bring together farmers and to facilitate their coordination and dialogue with government. The Uganda National Farmers' Association (UNFA) was thus formed in 1992, with support from the Danish Cooperation (DANIDA). UNFA's intended objective was to empower farmers to mobilize, and train fellow farmers, and help them access technological and other services, on a needs based and participatory scheme. UNFA, sometimes together with agriculture related organizations, provides services to its members for example agricultural advisory services, training and capacity building. Due to failure of the T&V programme, the government of Uganda supported UNFA's demand driven/cost recovery agricultural advisory service. UNFA has branches in most of the districts in Uganda. In order to be open to more organisations, UNFA adopted a federative scheme, becoming Uganda National Farmers' Federation (UNIFFE) in 2002. Prior to evolution of UNFA to UNIFFE, farmers' discussions had indicated a need for an umbrella organization that facilitated farmers to speak with one voice. Questions about UNFA's leadership and capabilities led to putting in place, the Agriculture Council of Uganda (ACU), in 2000. ACU is the Apex of all agricultural commodity oriented organizations.

There are many farmer organizations with varying degrees in their participatory nature, representativeness and linkage to local communities. Some of them are visible at national levels, but questionable regarding support to the farmers they represent. Others have a dense network of farmer organizations and have real potential to reach grassroots communities. This differing situation among farmer organizations has been acknowledged at national level, but action to address the disparity is lacking.

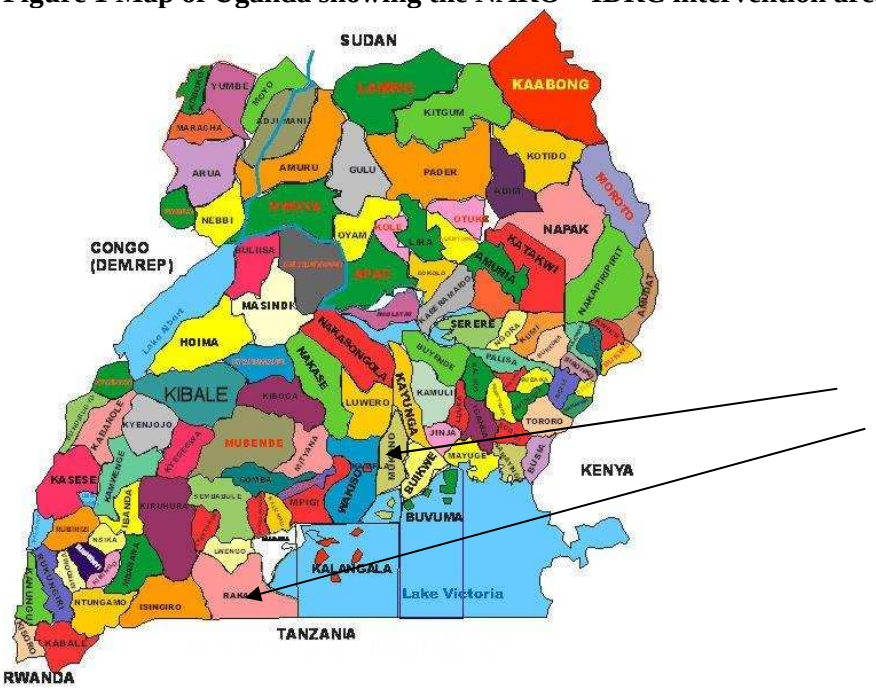
Donors, policy makers, researchers, extension workers, NGOs, opinion leaders, community institutions and farmers, aim at alleviating constraints that tend to hinder farmers from accessing improved living conditions. The different sectors strive to facilitate farmers with an enabling environment by for example providing favourable policies, market access, appropriate technologies, information, and infrastructure. But according to Mango (2008) MAAIF lacks a comprehensive strategy for regulating and harmonizing agricultural information and communication provided by the variety of sector stakeholders in the country. Consequently, there is need to identify a strategy that fosters collaboration among implementing agencies whilst addressing farmers' agricultural information needs. Bearing similar intentions, NARO – IDRC intervention searched for an alternative mode of information dissemination

having potential to achieve sustainable agriculture and food security among banana farming communities.

***Methodology of the NARO – IDRC intervention***

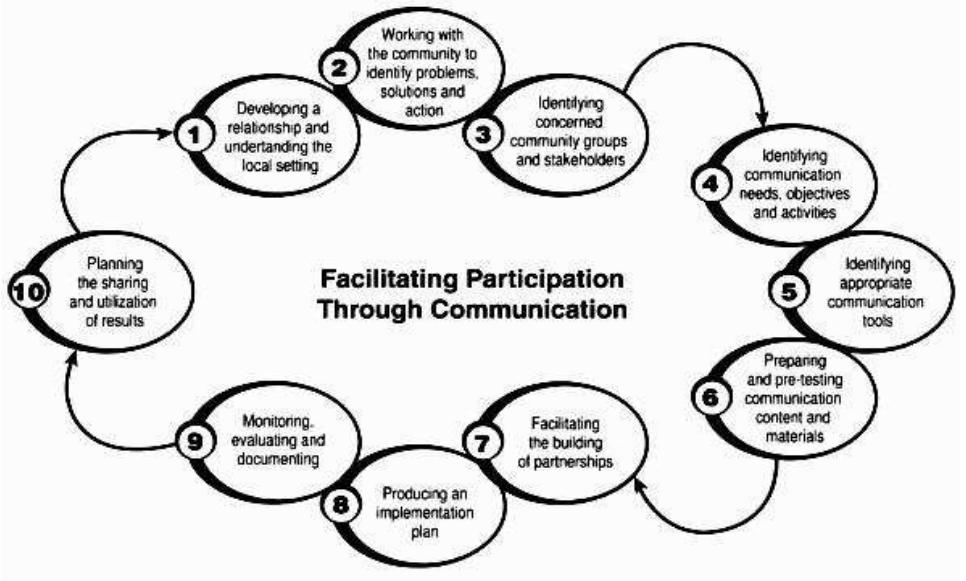
The intervention adopted a descriptive research design. It was carried out in two areas located in central and south western Uganda (Kimenyedde and Ddwaniro) respectively.

**Figure 1 Map of Uganda showing the NARO – IDRC intervention areas**




Study respondents were 120 small scale banana farmers. They were purposively identified as follows. In each of the two study areas, twelve farmer – groups chose five representatives forming sixty farmers, who together formed one PDC group. They worked on banana management challenges with the researchers, in line with the participatory development communication model indicated in Figure 2 below.

**Figure 2: The Participatory Development Communication Model**




Source: Guy Bessette (2004)

Final evaluation of the NARO – IDRC intervention in 2007 reported continued utilization of disseminated information leading to both improved banana yields, and farmers' livelihoods.

**Post project assessment of NARO – IDRC intervention**

Van Wicklin *et al.* (2000) in an FAO evaluative review pointed out the paucity of post project studies of long term effects of participatory initiatives and the difficulty of such would be post evaluation studies since they need in depth analyses of what happens in communities after project support has stopped.

Allahyari (2009) quoting Rao and Rogers, 2006 defines sustainable agriculture as a practice that meets current and long-term needs for food, fiber, and other related needs of society while maximizing net benefits through conservation of resources to maintain other ecosystem services and functions, and long-term human development. Allahyari asserts that sustainable agriculture is a knowledge- intensive system that demands a change from conventional agricultural information dissemination (extension) methodology which cannot achieve sustainable agriculture.

Madukwe (2006) states that failure of extension methodologies to effect sustainable agricultural growth is such a concern to stakeholders including donors that new initiatives are being mooted to enhance the generation,

dissemination and use of agricultural information and technologies. Abubakar et.al (2009) aver that effective communication of new resource findings and technologies in agricultural information dissemination to rural farmers, remains a promising strategy for increasing agricultural productivity.

***The problem***

Many development initiatives like the NARO – IDRC intervention of 2001 – 2007, report positive results at their closure. However, it is rare that project areas are re – visited to establish the outcome of the positive results that were reported at the end of the project, and to determine if those results still existed. This means that there is loss of potentially useful information about eventual outcome of disseminated information for use by future similar interventions. There is need to revisit a project site later after its closure to establish existing continued changes if any associated with project activities**.**

***Research questions***

i. What information did farmers obtain from the NARO – IDRC intervention and what were the results of farmers' utilization of that information?
ii. What information obtained from the NARO – IDRC intervention, were farmers still utilizing four years after closure of the intervention?
iii. What changes associated with the NARO – IDRC intervention, still existed among the study communities?
iv. What other related changes occurred in the study communities after closure of the NARO - IDRC intervention?
v. Did the NARO – IDRC intervention contribute to sustainable development, and food security?

***Methodology of the NARO – IDRC post - project assessment***

The post project assessment was executed in 2011, in the same study areas where NARO – IDRC intervention was implemented (see figure 1). It utilized a social survey descriptive research design. Study respondents were purposively identified. They were the same 120 small scale farmers who took part in the NARO – IDRC intervention. Triangulation of quantitative and qualitative data collection methods, that employed focus group discussions, key informant interviews, farm observations, and structured questionnaires bearing both open ended and closed questions, validated respondents' responses and reduced bias (see appendix I, II, III, IV). Research instruments sought for information in answer to the research questions in 3.2 above. Qualitative data was analysed progressively while taking note of key statements from respondents; quantitative data was analysed using Excel, Epidata and SPSS**.**

***Findings and discussion***

These are presented in answer to the research questions in 3.2 above. In each section, findings are presented first, followed by a discussion, and finally, implications for future information dissemination interventions.

*Information acquired, utilized and results of utilization*

Majority of farmers, 119 (99.2%) said they obtained and utilized new agricultural information from researchers. The new information was about several issues like, banana and natural resource management specifically, on construction of soil erosion trenches (see pictorial in the appendix), manufacturing and application of organic manure (mulching) and removal of male buds from banana fruits (debudding), for BBW control.

Farmers were still realizing relatively good banana yields (see pictorial in the appendix: a woman showing off a good banana bunch), with improved incomes, and improved living and health standards. Farmers had become model farmers. Farmers from other areas still visited them to practically learn from their continued well managed banana gardens.

From the semi structured questionnaires (see appendix IV) the majority of farmers 108 (90%) concurred saying,

> *Utilising the information acquired from the PDC initiatives contributed to an increase in banana yields. NARO researchers woke us farmers up. They gave us real information instead of the former situation when we believed that the BBW disease was due to witchcrafts, or that it was brought into our area by government.*

This means that farmers continued using information from the intervention because they realized that it was genuine. It was different from the information they were getting prior to the NARO – IDRC intervention. Consequently, only proven trusted information and technologies should be disseminated. NARO (2001) supports this assertion in its statement that, 'small scale farmers are generally cautious in adopting new technologies without proven tangible results'.

*Information from the intervention which farmers were still utilizing four years after its closure*

Majority of farmers, 119 (99.2%) said that they were still using the banana management information they obtained from the PDC initiatives. In Kimenyedde, 100% farmers' gardens illustrated continued use of BBW control information. This was exhibited by farmers' cutting off male buds from banana fruits (see Appendix IV). In Ddwaniro, all the seven gardens (100%) visited

illustrated that farmers were still constructing soil erosion trenches. The chairman of Ddwaniro farmers was still implementing all the technologies he learned during the PDC initiatives, that is, mulching, digging soil erosion trenches and planting shrubs to curb soil erosion in his banana garden, in exactly the same way that the NARO researchers had recommended.

One woman farmer in Ddwaniro who was still utilizing the information and implementing the technologies acquired from the NARO – IDRC intervention said,

> *I have just bought all this grass to mulch my garden. It is expensive, it costs one hundred Uganda Shillings 100,000/= (about USD 40) per lorry. I need about ten lorry - fulls for the entire garden. I got the money for the grass, from selling some of the bananas from my garden.*

Despite the grass for mulch being expensive, the woman farmer got the money for purchasing it through selling bananas from her banana garden. This means that farmers were still implementing technologies they learned during the NARO – IDRC intervention because they had proved that the technologies were beneficial. Improved banana yields in turn improved farmers' income generating capacities. This in turn made it possible for farmers to utilize recommended scientifically proven technologies. The State of Environment Report for Uganda (2008) supports this assertion when it indicates that due to small scale farmers' poverty, they can hardly implement recommended agricultural practices that require financial input. Future agricultural information dissemination ventures should take into consideration farmers' income generating capacities. They should desist from introducing technologies that are too expensive for small scale farmers.

*Farmer to farmer information sharing forum*

Through the NARO – IDRC intervention, farmers acquired farmer to farmer information sharing forums and information sharing skills which they were still utilizing. They had gained confidence, become creative, innovative, and competitive, all of which enhanced their potential for survival. The District authorities in the areas of intervention advised all development actors to make use of participatory information sharing in their interventions, which was supportive of 'the search for a strategy that fosters collaboration among implementing agencies whilst addressing farmers' agricultural information needs' (see last paragraph in section 2.3 above)

Farmers successfully wrote and won a Makerere University based I@Mak research award for training fellow farmers in best farming practices. With some of the money they obtained, they started a farmers' money saving fund. They started selling bananas at local and international level, as a community group.

They gained friendship and fame through farmer to farmer information sharing. Farmers' spirit of voluntarism flourished, they no longer demanded to receive financial compensation for participation in community development work. This attracted several other development agencies who found them easier to work with compared to other farmers. This is evidence illustrating PDC potential to facilitate farmers who took part in its programme, to go beyond planned project objectives and achievements.

*Men farmers and their women*

Male farmers had become gender alert**.** This was a change from their original behavior when they refused their women from taking part in trainings organized by male extension workers. Husbands allowed their womenfolk to take part in agricultural training forums and to acquire information from male extension workers (see Pictorial in appendix V: a woman farmer showing off soil erosion trench to a male extension worker). The change in the men to allow their women to receive information from male extension workers came about after they realized the usefulness of the disseminated information. Future information dissemination interventions should be alert to the gender dimensions in information dissemination and acquisition. Mangheni and Beraho (2005), support this assertion arguing that although the majority of rural farmers are agriculturally disadvantaged, women are further disadvantaged due to their socio – economic, and cultural status.

*Farmer innovations*

Farmers became 'Information actors'. They had learned how to develop information resources, how to take still and motion pictures using cameras, how to make posters and how to utilize them for farmer to farmer information sharing (see Pictorial in appendix V: farmer showing off brochure that PDC farmers made four years ago, but which he still consulted). One lead farmer acting as key informant in Ddwaniro said,

> *In researchers' absence, we farmers have continued to advise and supervise each other. PDC enhanced farmers' potential to improvise ways of utilizing the recommended scientific information. For example, regarding how to make organic manure, we farmers were advised to dig deep huge 6ft by 6ft by 6ft holes from where to decompose the organic materials, but some of us farmers modified this and started decomposing and manufacturing organic manure above the ground. This method also manufactured organic manure, yet it was less labour intensive.*

This means that farmers understood what worked in the technology which researchers introduced to them. They modified the technology and left out its laborious part, but maintained the important aspect. In that way, they did not

reject the entire technology, only the labour intensive aspect. Information disseminators should empathize with the intended users of the disseminated information and technology. They should work with the intended users to perfect the technology before confirming the information and technology for dissemination.

*Unanticipated results*

Farmers acquired leadership skills. Many became leaders in their local communities at village and district level. Some including women farmers successfully campaigned for political positions. For example, one woman became the speaker of the local council (LC) of the area. One other previously shy woman became a showcase among the village and beyond through her model banana garden which earned her prizes on several occasions.

***Challenges associated with the NARO – IDRC PDC intervention***

With positives, came challenges**.** Farmers' success resulted into no further need for external facilitators, consequently, some of those who facilitated in the NARO – IDRC intervention for example the development communication specialist who was the lead facilitator, were rendered jobless. Researcher – farmer participation in the initiatives, led to jointly developed information resources, an emerging question was whose was the copyright? Banana farmers' good organization attracted other development actors some of who were yet to appreciate the participatory information sharing model. Future information dissemination interventions should examine and appropriately adapt the PDC model to their different contexts.

**Conclusions**

The overall objective of the post project assessment was to establish whether the NARO – IDRC intervention contributed to sustainable development and food security. Prolonged existence of an information dissemination project facilitates long term use of the disseminated information and its associated results. However, long term use when the information originators are still working with the beneficiary community does not illustrate sustainable development and food security. This is because the information originators are still within the community to encourage and urge the information recipients to continue utilizing the disseminated information.

The NARO – IDRC intervention occurred in two phases between 2001 and 2007, which was relatively long, but which could not confirm sustainability of results among the farmers. Proof of sustainability of results could only be implied after the closure of the intervention. Moreover, after some years during

which time recipients were left on their own to decide whether to continue or discontinue utilizing the disseminated information.

Post project assessment facilitated gauging the degree of sustainability of the NARO – IDRC intervention's results. Information dissemination intervention may have nothing to show other than change in the recipient's behavior whose sustainability may be difficult to prove, except if there is a physical culmination of the behavior change that will illustrate the sustained adoption of the disseminated information. In the case of NARO - IDRC intervention, there were three physical results: sustained improvement in banana yields, sustained banana management practices of digging soil erosion trenches, mulching and cutting off the male bud from the banana fruits, and sustained utilization of participatory mode of information sharing. Farmers sustained utilizing the agricultural information they obtained four years before the assessment was carried out. They continued getting the desired objectives. All this implies a contribution from the NARO – IDRC participatory mode of information sharing.

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**Appendix 1: Focus Group Discussion Guide**

1. Tell me about the NARO – IDRC PDC initiative
2. What were the objectives of researchers in the initiative?
3. What were the objectives of farmers in the initiative?
4. How were the objectives of researchers and farmers addressed in the initiative?
5. What objectives were achieved?
6. Which objectives were not achieved? Why were they not achieved?
7. What new information did you get from the initiative?
8. From what you learned, what are you still putting into practice?

**Appendix II: Key Informant Interview Guide**

This was constructed taking into consideration emerging issues from data gathered using other research instruments.

- What do stakeholders consider to be key elements in agricultural information dissemination? Were these achieved in the PDC initiatives in Ddwaniro and Kimenyedde?
- How did researchers use PDC to address farmers' and other stakeholders' aspirations and concerns regarding agricultural information dissemination?
- Did farmers acquire new information during their participation in the PDC initiatives? To what extent are they still using the information they acquired?
- What were the benefits of PDC according to participants and non - participants?

**Appendix III : Farm Observation Checklist**

What is the condition of the farm?
How is the banana yield?
What banana management methods are being used on the farm?

**Appendix 1V:**

**Structured questionnaire bearing both open ended and closed questions**

1. Do you know about PDC?
Yes
No
2. Did you participate in PDC initiative either in Ddwaniro or Kimenyedde?
Yes
No
3. What do you consider to be key elements in Information Dissemination?
4. Which of the above was contained in the NARO – IDRC PDC initiative?
5. What information did researchers share with farmers during the PDC initiatives?

6. Of the information that researchers shared with farmers, which information are farmers still using?
7. Which information have farmers abandoned?
8. Why have farmers abandoned that information?
9. What were the challenges in implementing PDC for agricultural information sharing?
10. What are advantages of PDC for agricultural information sharing?

**Appendix V: Pictorial**

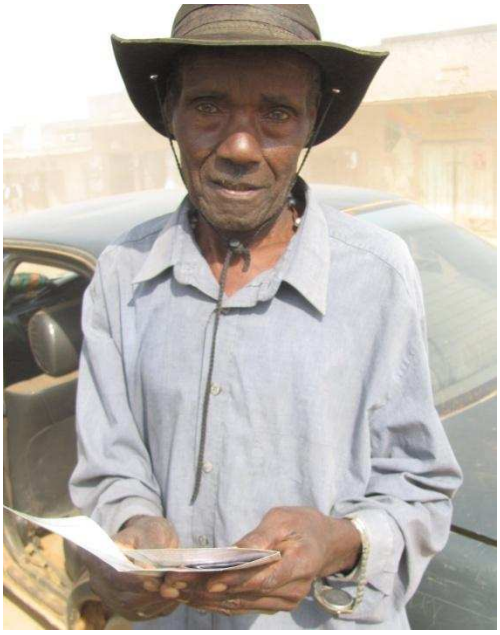
**Woman mulching banana garden in Ddwaniro**

**Woman showing soil erosion trench to extension worker in Ddwaniro**

**Woman showing rejuvenated banana garden in Kimenyedde, Central Uganda**

**Male only Focus Group Discussion in Kimenyedde, Central Uganda**

**Women only Focus Group Discussion in Kimenyedde, central Uganda**



**Farmer in Rakai, South Western Uganda, showing off a farmer made brochure that was made four years earlier but which he still consulted**