

**THE APPROPRIATENESS AND EFFECTIVENESS OF
DRAMA AS AN AGRICULTURAL EXTENSION TOOL**

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PREFACE

One particularly important theme running through this series, now in its twenty-sixth volume, is that of action research aimed at improving the methods used for reaching the rural poor with new agricultural technology. Several earlier publications have promoted pioneering research on the use of non-formal seed systems for the rapid, widespread and low-cost dissemination of new bean varieties – approaches that are now becoming more widely accepted for several crops. This volume reports a novel yet practical analysis of a recent case study in which drama was used for informing rural people about the results of agricultural research. The outcome appears so encouraging that it may well have similarly far-reaching implications, and deserves wide attention.

The Network on Bean Research in Africa serves to stimulate, focus and coordinate research efforts on common bean. The network is organized by CIAT in collaboration with two interdependent sub-regional networks of national programs: the Eastern and Central Africa Bean Research Network (ECABREN) and the SADC Bean Research Network (SABRN) for southern Africa.

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ACRONYMS

AHI	African Highlands Initiative
AFRENA	Agroforestry Research Network for Africa
AKIS	Agricultural Knowledge and Information System
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ICRAF	International Center for Research on Agroforestry
CIAT	<i>Centro Internacional Agricultura Tropical</i> , International Center for Tropical Agriculture
CIP	<i>Centro Internacional de la Papa</i> , International Potato Research Center
DAO	District Agricultural Officer
FEW	Field Extension Worker
FORI	Forestry Research Institute
FPR	Farmer Participatory Research
NARO	National Agriculture Research Organization
NGO	Non-governmental Organization
PRA	Participatory Rural Appraisal
RRA	Rapid Rural Appraisal
USAID	United States Agency for International Development

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ABSTRACT

Many research and development projects have failed due to the lack of understanding or recognition of how the intended beneficiaries learn and communicate. Specifically, research centers and extension agencies have been at fault for not identifying and applying appropriate methods of passing on knowledge to farmers. National agricultural research systems (NARS) and international agriculture research centers (IARCs) have an important role to play in the sustainability of agricultural practices in Africa and in catalyzing or supporting the activities of national research institutions, but their potentially positive impact has been hindered by the weak link between subsistence farmers and researchers. The International Center for Tropical Agriculture (CIAT) has recognized the limitations in the communication system and is researching, with its partners, different ways of disseminating information on new technologies.

One of these approaches involved a unique technology transfer project in the Kabale District of south-west Uganda to use drama as a method for agriculture information dissemination. As illustrated in this study, the method proved to be an effective mode of communication. Roughly 13, 000 people attended six performances. Of respondents who participated in a subsequent evaluation, 68 per cent learned something new from the drama, and 65 per cent made a change in their agricultural practice after the drama. The possible reason for its effectiveness is that drama is a *systems approach to extension* and, as such, it is able to combine complementary social, technical, and economic messages. Although the project's objectives of obtaining relatively high rates of learning and adoption were achieved, there were also a number of limitations. These limitations and the recommendations for rectifying them are included in this paper. As well, three options are presented on ways in which research centers or agriculture NGOs can use drama with their programs.

INTRODUCTION

Overview

The Kabale District in South West Uganda, part of the highland region of East Africa, is an area faced with serious soil erosion and soil infertility problems due to the high population density, the continual use of land and the steep terrain. It is the third most densely populated district in Uganda with a population density of 280 people per square kilometer and a population of 512, 200 (KDPAN, 1997). Agriculture is the main occupation in Kabale District with over 86 percent of the population working as subsistence farmers, these being primarily women and children. In the past, the Bakiga (the people of Kabale District) have been well known for being very hard working. However, the men are now gaining a reputation of being lazy and drinking heavily (Rwangyezi, 1997). This behavior has a direct impact on overall agriculture production, family wellbeing, and women's workload and responsibilities.

Beans are the major source of protein in Kabale District. In recent years, bean yields have decreased which ultimately affects people's protein intake and household income. The common beans grown in the area are bush beans (beans that grow low to the ground). These bush beans have been attacked by two pests: bean stem maggot (an insect) and root rot (a disease). The severity of both problems is affected by low soil fertility, intensification of land use and soil moisture (water stress). One of the solutions is to plant a climbing bean as opposed to the bush bean. There are several advantages in growing climbing beans. Climbers have shown in tests to have two to three times the yield of bush bean (700-900 kilograms per hectare) (Kisakye and Niringiye in Grisley, 1993). The space required to produce similar bean yields is smaller for the climbing bean than that of the bush bean, an important factor where there is land pressure. Some of the disadvantages of the climbing beans are that there is a need for staking material, which can prove difficult in a deforested area, and staking makes bean production more laborious than the bush bean production.

In Kabale, few farmers grow climbing beans. The Uganda National Bean Program (UNBP), with support from CIAT and the Eastern and Central Africa Bean Research Network (ECABREN), identified several climbing bean varieties namely *Ngwinurare*, *Gisenyi*, *Umubano*, and *Vuninkingi* which originated from the Rwandan National Bean Program and are appropriate for the Kabale District. In addition, they have identified certain soil management practices which result in reduced losses to root rot diseases. This integrated approach to disease management requires not only a shift from traditional bush beans to climbing beans but also improved soil fertility and use of stakes; researchers see agroforestry as a sustainable way to improve farmers' access to the latter two components. The current problem faced by Uganda's researchers, like many others, is dissemination: how to get the information and seed of better varieties to farmers.

In 1996, the Ndere Dance Troupe, CIAT and the Agroforestry Research Network of Africa (AFRENA) combined forces to disseminate, through drama, information on climbing beans and the multipurpose use of agroforestry trees. Additional collaborators

were UNBP and the Abekundire Women's Group. The Ndere Dance Troupe, a professional drama group, obtained funding from a regional project on technology transfer to develop a script and to train the Abekundire Women's Group that had been working with AFRENA. As part of the training, the professional and amateur groups performed together six times in rural communities in the Kabale District. This report is an evaluation of the drama project.

A great deal has been written about theater for development, but there are few long term evaluations, and little written on the medium to long term impact of a theater project. This study will take the current literature one step forward by recounting one case study, evaluating a drama as a technology transfer project, and critiquing the extension methodology used. Included in this evaluation are a number of recommendations to improve future drama projects. It is hoped that research centers and other organizations will continue to monitor and evaluate projects involving drama.

The Research Problem

Many research and development projects have failed due to the lack of recognition of how the intended beneficiaries learn and communicate. CIAT has recognized the limitations in the dissemination system and is evaluating alternative means of communication. The research problem is whether or not theater is an appropriate and effective means of communication between subsistence farmers and researchers.

Purpose Statement

The main purpose of the study is to evaluate the appropriateness and effectiveness of drama as an agriculture extension tool. There are three main objectives. The first is to determine how subsistence farmers learn about new technologies and agricultural practices. The second is to evaluate the appropriateness of drama as an extension tool. Appropriateness is measured in terms of how drama fits into the current communication system in rural communities, how different farmers want to be given information, how they learn best and how they view drama in comparison to other extension methods. The last objective is to evaluate the effectiveness of drama as an extension tool. Effectiveness refers to the 'conative', cognitive and affective impact that drama has on an agricultural community (Gonzalez, 1991, p. 45).

DESCRIPTION OF PROJECT ON DRAMA AS A TECHNOLOGY TRANSFER METHOD

The project that was evaluated was entitled *Drama as a Technology Transfer Method*. The two main goals were to have a better understanding of the role of drama groups in technology transfer and to have a better adoption of climbing bean and agroforestry technologies by introducing these technologies as a combination. The four main objectives were 1) to expand agroforestry technologies and climbing bean production; 2) to train local drama groups to pass on messages using drama; 3) to evaluate the effectiveness of using drama groups to promote technologies; and 4) to evaluate the effectiveness of introducing agroforestry technologies in combination with a technology that provides farmers an income in the short term.

Those responsible for the organization of the project were the Ndere Dance Troupe, CIAT and ICRAF. Funding for the project came from USAID through a technology transfer project with CIP and ASARECA, and from the African Highlands Initiative (AHI). The main actors were the Ndere Dance Troupe and the Abekundire Women's Group. The latter is a local Kabale group initially formed in 1990 as a literacy group but gradually was promoted by ICRAF/AFRENA to learn about and to adopt agroforestry practices and to be part of the Two Wings Agroforestry Groups of Kabale District. Since their creation, their activities have included singing, dancing and acting at different events in Kabale, literacy classes, and craft production. Membership fluctuates between 40 to 70 women, the majority coming from the lowest wealth category of the community (Guinard, 1995a) and having never attended school.

There were six main phases to the technology transfer project. Firstly, in the script writing phase the director of the Ndere Dance Troupe wrote the script based loosely on a play that the Abekundire Women's Group had been previously performing. The play was put into written form and in the second phase the professional drama group provided some acting training for the Abekundire Women's Group. In the third phase, the two drama groups performed together in six different communities. A week after the performances in the fourth phase of the project, ICRAF/AFRENA distributed 290 kg of climbing bean seed to 12 different communities in Kabale District, some corresponding to the 6 communities where there had been performances. A year after the initial performances, the Abekundire Women's Group performed the same play twice on their own as the fifth phase. Finally, in the sixth phase, this evaluation of the drama took place one year or two harvests after the first six performances.

The performed play is entitled *Ekikambi*, which means a piece of tobacco which has gone flat. The Bakiga women of Kabale chew tobacco and, after chewing one piece for about two weeks, it becomes exhausted, or *Ekikambi*. If a woman does not have another piece of tobacco she will add rock salt to the old lump of tobacco and this revives the tobacco's sharpness.

Throughout the play, *Ekikambi* is used in reference to the infertile soil of Kabale. As well, the term is used to describe the men of Kabale District, who are portrayed as drunks

and as useless as an *Ekikambi*. The solutions for increasing soil fertility and for men to change their lifestyle are equivalent to the rock salt.

The play was performed in six different communities in Kabale District. Posters were distributed before the performance and, directly beforehand, vehicles went up and down the roads trying to get people to come. No official audience attendance was taken; however, organizers estimated that over the six performances, approximately 13,000 people saw the play (Rwangyezi, 1998) . All types of community members were present.

Ekikambi Song

*Who can give us salt of the world?
Give me salt of the world, you good people
You see our world has become small
Kigezi has become smaller
The soil has become exhausted
It has become Ekikambi
There is no taste
We are hungry
There is lots of famine
Poverty has covered our area
The men have no work
They have concentrated on drinking.*

The story starts off in the future, as Uganda is celebrating its 40th year of Independence. There is a community festival and local members of the community are supposed to perform in front of local officials. However, the children and women are so hungry and weak from too much work that they cannot perform. During the celebration, the local women perform a play for the officials of the community depicting the common problems felt in the community; men's drinking habits, lack of food, and lack of good land for cultivation. Disrupting the play, an audience member becomes enraged that his wife is showing their private problems in front of the entire community. In a confrontation in front of the community, he decides to throw his wife and children out of the house.

After being sent away by her drunk husband, the main character, *Bakeinyaga* learns from other local farmers about how to care for her soil, plant climbing beans, and how to care for a zero-grazing cow. In the end, she has turned her whole life around and her children are able to eat properly, she is able dress decently, and she harvests bags and bags of climbing beans.

Realizing that his wife has made a success of herself, the husband asks her for forgiveness and to be allowed into her house. She will agree as long as he can recite all the messages that she learned in order to turn her life around. He is able to recite the messages, she takes him back and there is reconciliation.

The messages are disseminated through the story, through song and dance, and the technical parts are shown by the actors demonstrating with their bodies how trees stop soil erosion and how beans should be planted in rows and staked.

The main messages are to:

- Improve the soil by planting agroforestry trees, using manure from a *zero-grazing cow*;
- Stabilize terraces by planting bunds of napier grass and agroforestry trees along the edges;
- Plant climbing beans because they have greater yield than bush bean types and are more resistant to root rot;
- Stop or decrease drinking because it ruins families;
- Work hard.

There are some extraordinary aspects within the Drama as Technology Transfer Project which make this project unique. First of all, it is an unconventional extension method for a research centre to support. As well, it is not common for two international research centers to combine messages and work together to disseminate information. In addition, the actors, who are subsistence farmers, are the main extension agents. Agriculture researchers tend not to work with poor farmers in their trial work. Within this project however, the recipients of the messages were from all wealth categories and the actors were from the lowest wealth category (Guinard, 1995a).

EVALUATION RESEARCH SITES AND METHODS

There were two main studies conducted; the first was a *communication study* and the second was an *impact of drama study*. The evaluation took place a year after the initial six performances. Table 1 outlines the various components of the two studies.

To better understand how farmers communicate, how they want information presented and how they view extension tools, the communication study was conducted in two communities in Kabale District. This district was selected because that is where the drama performances were held. To select the sites, discussions were held with the District Agriculture Officer (DAO), CIAT staff, CARE staff, and those involved in the drama project.

The communication study sites were selected based on the following factors: distance from town center, NGO presence, Field Extension Worker (FEW) presence and climbing bean production. Two of the drama study sites (Bukinda and Kyonya) were randomly selected from the six sites where the drama had been performed. The third site (Kiringa) was chosen specifically because there were extension agents working in the area and the communication study was to be done in the same community. A component of the drama study was done in a fourth site (Katungu) where the immediate impact of the drama on the community was investigated.

Table 1: Study Outline

<i>Study</i>	<i>Sites</i>	<i>Evaluation Methodology</i>	<i>Participants</i>
Communication Study	Katungu Kiringa	AKIS analysis	Women, Men and Youth Groups
		PRA/RRA exercises	Groups and Individuals
		Wealth Ranking	Key Informants
		Formal Survey	20 respondents from different sex, age, wealth category and education level
Impact of Drama Study	Kiringa Bukinda Kyonyo Katungu	Wealth Ranking	Key Informants
		Self-Evaluation	Abekundire Women's Group
		Interviews	Project Stakeholders
		Formal Survey (long term impact)	60 community members in the communities of Bukinda, Kyonyo, and Kiringa
		Formal Survey (short term impact)	10 community members in Katungu
		Formal Survey (impact on actors)	9 members of Abekundire Women's Group

A comparison of results from the study's Rapid Rural Appraisal/ Participatory Rural Appraisal (PRA/RRA) activities with results from recent studies in other communities in Kabale show that the four communities are representative in terms of agricultural production and communication flows in rural communities in Kabale District (Tukahirwa, 1997, AHI, 1997; Farley, 1996; KDPAN, 1997).

For the communication study, an assessment of the Agricultural Knowledge and Information System (AKIS) of two communities was done: one in a community which had extension agents (Kiringa), and the other in a community where there were no extension agents, NGOs or development projects (Katungu). The purpose was to get an understanding of how information flows in a community, and to assess who has access to information and who are sources of information. The main variables were sex, age, education level and wealth. This was done using PRA/RRA with small groups and individuals, and participant observation. The term PRA/RRA is used because although there were elements of community participation in designing the exercises and in analyzing the data, the process was primarily lead by the researcher in order to gather data. The activities included community mapping, Venn diagrams, community agricultural information flow charts, mapping of how the day is spent and community

issue/problem ranking. In order to determine indicators of wealth (to be used in the surveys), wealth ranking exercises were done with key informants in Kiringa and Kyonyo. These indicators were combined with indicators identified in an ICRAF study in Kabale District (Guinard, 1995b).

After compiling the information, it was presented back to the communities for their feedback and assessment. To conclude the communication study, a formal survey was conducted with 20 respondents and a purposive sample of each community was used.

In the impact of drama study a formal survey was conducted and a purposive sample was used as well. In total, 79 individuals participated: 60 were members of communities where the drama was presented in 1997, nine were from the Abekundire Women's Group, and 10 were members of communities where the drama was recently performed and where the AKIS was identified (Katungu). A translator was used in this phase of the research.

A purposive sample was used to get a range of people that belonged to different categories (wealth, education level, age and sex). Diversity among farmers was sought and, although the above variables are not exhaustive of the differences found among farmers, a wide representation was attained.

For both surveys it was important that the participants worked in agriculture. Because of this, 80 percent of the respondents were women. For the drama survey, primarily those who had seen the drama (76 percent of sample) were sought although, to investigate the second phase of dissemination, 24 percent of the respondents had not seen the drama presentation.

Data collected in the surveys was analyzed using SPSS. Qualitative data was analyzed using maps, flow charts, and drawings. All of the main questions were answered combining the qualitative and quantitative data.

The researcher conducted formal and informal interviews with key people involved in the drama project, local NGO extension agents, CIAT researchers, and Ugandan drama specialists. Nine out of 25 Abekundire Group members involved in drama were interviewed for their feedback on the project and to identify how their involvement in drama and specifically in this project had impacted on their lives. In addition, the 25 group members did a group self-evaluation of their performance and of the project with the use of video and the results are included in this evaluation.

To conclude the research, the results from the PRA/RRA activities, participatory observation, interviews and surveys were presented to the four communities, and to the NGO and research community in Kabale and Kampala for their feedback. Results were presented in Zimbabwe and Kenya to agriculturists and extension researchers for their comments.

Critique of Methodology

The study has a number of limitations. Firstly, the researcher was unable to speak the local language, and thus trying to observe communication systems through an interpreter proved difficult. Much of the daily communication between community and family members was not closely studied because of this limitation.

Secondly, although many methods were used to determine the impact drama had on communities, it is virtually impossible to identify the full causes for change in agricultural practice. One step taken to rectify this problem was identifying the other possible influential factors; the second step involved directly asking people why they chose to make a change in their agricultural practice.

Thirdly, the researcher found it difficult to do PRA/RRA (specifically community issue/problem ranking) activities with communities because the activities raised issues that members did not feel they could deal with and instead expected the researcher to solve. This did not have a negative impact on the data collected but did effect how the researcher was perceived. The PRA/RRA activities were limiting because the 'natural' step of finding solutions to the issues raised was left out.

Although there were limitations, there were also some positive and unique aspects to the methodology. The researcher chose to use many different research methods to investigate the AKIS and to evaluate the drama project. Triangulation was key to this study as there are many stakeholders involved in research and extension, and each view is equally important and informative.

There have been few studies that attempt to identify how farmers learn best, how they want to learn and how they view different extension tools. Although this study was not thorough in this area, the findings are insightful with respect to the direction to take in project planning and further research in the area of communication. The evaluation methodology used is unique in that AKIS analysis was used to evaluate an extension tool. AKIS has normally been used as a stakeholder facilitation tool.

FINDINGS

Agriculture Communication Systems and the Implications for Extension

Before looking specifically at drama, farmers' current communication systems were identified and their experience with agricultural extension was explored.

In a PRA/RRA exercise, poverty related to low crop yields was seen as the biggest problem facing communities by women, youth and men. However, results from the communication survey show that 67 percent of the respondents do nothing when it comes to dealing with pests and diseases that are effecting their crops. Only 19 percent said that they had tried a new method of cultivation and 46 percent said they had tried, at one point in time, planting a new seed variety. Most farmers were not aware that there are certain bean seeds that are resistant to root rot and have a greater yield than what is currently

grown. As well, the average farmer interviewed did not know that there are agricultural research centers for crops such as beans. Only 2 percent of the sample felt they were in contact with some type of agriculture resource. As well, 43 percent had never had any previous contact with an agricultural extension agent. Strong communication linkages between family members and neighbor farmers were identified.

Government agricultural extension agents in Uganda primarily deal with groups of farmers. Due to a restricted budget and lack of staffing, this is more efficient than working with individuals. However, concentrating on groups is problematic in that a high percentage of people are not members of groups. In this study, 35 percent of the respondents were not members of formal or informal groups in their community. Those from the lowest wealth category and youngest category made up the largest percentage of non-members, while no large differentiation in group membership was seen in regards to education level or sex.

Reasons given by some women for not joining groups were because they felt they would be negatively judged if they did not have a nice dress or more than one dress to wear to meetings. As well, a reason for not joining a craft group was that some women felt too proud to admit that they did not know how to do that craft.

The farmers, researchers, NGO staff, and Department of Agriculture staff agree that the current extension services are not adequate. There is a need for an extension service which meets the needs of farmers that live far from the town center, those who do not own land, and specifically youth and women. However, the service should address the whole community because, although men do little agricultural work, they are part of the agriculture decision making process. In general, respondents felt that one of the best ways to disseminate agricultural information to the whole community was through the local government system.

Appropriateness of Drama

After determining the need for extension services in Kabale District, the appropriateness of drama was examined. There is a history of drama in Uganda; however, in rural Uganda it is relatively new to see formal theater performances such as *Ekikambi*. Many youth said that it was the first time that they had seen a drama performance although in rural areas it is common to see spontaneous dances and dramas where messages are conveyed. There is a Ugandan tradition of spreading important issues through comparative stories, songs and proverbs (Rwangyezi, 1996). The way in which *Ekikambi* was performed built on the tradition of drama within the country while the non-traditional aspects of having a stage, professional actors, and a sound system added some novelty for the audience.

In addition to the tradition of drama, appropriateness was measured in terms of how farmers perceive it as a learning method. In a PRA/RRA exercise, farmers ranked eight different learning methods as to how they learn best. Overall, drama was not identified by farmers as the best extension method that they learn from or would want to learn from.

It ranked fourth out of eight methods of learning, preferred only before video, school and learning while doing chores. Although drama was not ranked very high as an extension tool, farmers still identified some very positive aspects arising from drama presentations. Some quotes from farmers regarding drama are included in Figure 1.

Figure 1: Farmers’ Quotes on Drama

“In the play there is demonstration and if you can learn through demonstration you can make a big change in your home.”
“Drama gets you motivated to work harder or change something.”
“...with drama, you can reflect on what is going on, it’s being played by the common people and therefore looks very real.”
“A play reinforces what I’ve already learned in the other extension tools.”
“...they (*the actors*) have to be demonstrating and you can go and copy what they have been showing you”
“...because when you see people you can learn and it reinforces ideas that the agriculture officer has already discussed”
“I can watch a demonstration and then compare what I see in the play to what I see at home”
“In drama, there are demonstration which I can carry out on the field”
“...when acting you follow the play as if it is real. There is more interest in people.”

From the comments, demonstrations within drama seem to be a key aspect to learning. Moreover, it was also identified as a motivational tool.

There was a strong preference towards extension through an agricultural extension agent amongst farmers from different categories however, as previously mentioned, 43 percent of respondents had never previously spoken with an extension agent. Ironically, there were slightly more people who had not had previous contact with an agricultural extension agent who thought that an extension agent would be the preferred method of extension. Some quotes from farmers on their views of agriculture extension agents are found in Figure 2.

In the extension preference ranking exercise, farmers continually put extension methods in sequence of how they would like to have information delivered to them although this was not asked of them. This suggests that messages need to be presented in a numerous ways and through different means in order to get optimal understanding. Table 2 illustrates some of the findings to specific questions regarding extension preferences.

Figure 2: Farmer's Quotes on Agriculture Extension Agents

“...because an agriculture officer has been trained in that way, he knows what he is doing”

“...because most are knowledgeable people about agriculture”

“...he gives advice about how land can be looked after”

“...because that person is the most knowledgeable”

“...because he knows so much about agriculture, he can give advice or a remedy before the situation gets worse.”

“I will listen to an officer because he is supposed to be ‘all knowing’.”

“It’s the easiest way to learn.”

“...because he (extension agent) is the one who has studied it the most; he knows all the tricks in agriculture.”

“...because he knows more about agriculture than anyone”

“The extension agent gives advice and he know what he is talking about. These days people are digging and don’t know what they are doing and the harvest is zero.”

“I like extension agents because he is well learned and the information he is giving is correct”

Table 2: Farmers’ Thoughts on Extension

<i>Extension Method Preferences</i>
<p>How would you like agricultural information? 28 percent would like to learn about agricultural issues through an extension agent, 14 percent through a family member, 10 percent through local friends, and 10 percent through groups. Other suggestions included workshops, drama, government gatherings, and experimenting.</p>
<p>What is the best way for government to pass on agricultural information to farmers? 65 percent said through the local government system, 15 percent said through extension agents, 5 percent through the church. Other suggestions included women’s groups and radio.</p>
<p>Rank agricultural extension methods in order of how you learn best? 45 percent of respondents put extension agent first, 20 percent placed experimenting first, 15 percent placed learning from local farmers first, and 5 percent placed drama first, 5 percent placed visiting farmers from outside the cell first. The learning methods which did not rank high were learning from school, learning through video and learning while doing chores.</p>
<p>41 percent of women chose extension agent first, 25 percent chose local farmers first, 16 percent chose while doing chores, 8 percent chose experimenting first. 50 percent of men chose extension agent first, 38 percent chose experimenting, 12 percent chose drama.</p>

In regards to appropriateness, some form of agriculture extension is needed and wanted in Kabale District and drama does partially fulfill this need.

The appropriateness of the messages presented in *Ekikambi* was looked at as this has a direct impact on the effectiveness of drama. The four main messages did correspond to the main issues facing communities as identified in certain PRA/RRA exercises and in recent reports on Kabale (Tukahirwa, 1997, AHI, 1997; KDPAN, 1997). Although most messages were appropriate and relevant, the message about the hazards of excessive drinking was not acknowledged by community members as a problem in their community. In addition, there were a number of messages which would have been relevant in the context of the play but which were not included. These include the issue of pests that affect the climbing bean crop and the very important issue of where to buy climbing bean seed. Another important point which effects the impact is that some messages were exaggerated which could potentially impact the farmer's views and ultimately adoption of the technologies.

Effectiveness of Drama

In the evaluation, three types of effects were researched; cognitive, 'conative' and affective. A *cognitive effect* pertains to knowledge gain, change in levels of awareness and forms of learning. '*Conative*' effect refers to behavior change while *affective effect* refers to feelings connected to attitudes, opinions or evaluations. These can be positive, negative, or neutral feelings towards the object (Gonzalez, 1991, p. 45). For the purpose of this study, cognitive effects were focused on and affective and 'conative' effects were identified although not thoroughly explored.

First of all, the cognitive effects of the drama on communities are discussed. Past evaluations of drama projects reveal that drama is an effective method of raising awareness and teaching about issues. However, these evaluations have been primarily of dramas with dominantly social messages (i.e. family planning, AIDs, hygiene, privatization) and not technical messages related to agricultural practice.

The results from this study demonstrate that drama can be an effective method of both awareness raising and teaching about technical issues. Although the audience attendance was not taken, it is estimated that at least 13,000 people saw the 6 performances with the attendance ranging from 600 to 4000 people at each performance (Rwangyezi, 1998). Of the survey respondents who saw the drama, 68 percent said they learned something new from the drama, 24 percent said they did not learn anything new, and 8 percent said although they did not learn anything new, the play reminded them of correct practices and motivated them to continue farming.

Even though the play was highly entertaining, filled with jokes, songs, dance and acrobatics, the audience still heard all the main messages that they were intended to hear. The first main message discussed by those surveyed was to improve the soil, followed by planting climbing beans, planting agroforestry trees and obtaining a zero-grazing cow.

In an exploratory search, it was found that different people heard and concentrated on distinct messages in the play. Men discussed the entertaining aspects first, followed by planting trees and raising cows, and very few mentioned terracing land. In contrast, the women first discussed improving the soil, followed by planting climbing beans, planting trees and terracing the land. These findings reflect the traditional roles of women and men in the community. It can be assumed that relevant messages touched home and people connected to what was most prevalent in their minds.

People were able to describe the whole plot and pick out main messages 10 months after the drama. There are a number of possible reasons for this high rate of learning and retention. Although there is a tradition of community theater in Uganda, it is still an exceptional and therefore memorable event to see a formal performance in the rural areas (Mbowa, 1998). In addition, it seemed that the audience could relate quite closely to the characters. The problems experienced by the main characters were similar to their daily problems so they were very attentive to the solutions. In one community, members of the community are now using the names of the two main characters (*Rukanyanga* and *Bakeinyaga*) to describe people within the community. For example, when they see a woman working very hard, they refer to her as *Bakeinyaga*. As well, when they see a drunkard, they call him *Rukanyanga*. At a performance in another community, as the play ended an audience member was crying. When asked why, he responded that he felt that the play was depicting his own life and it made him very sad.

Some respondents said they listened very hard because they knew the actors had come all the way from Kampala so they obviously had something important to say. In contrast, others said that because the actors were local farmers like themselves, they knew the solutions must work.

One of the most important aspects was that people were having fun and it was not a serious environment. Although the play dealt with serious community issues, the audience members did not feel that that they were being lectured to and were possibly more open to the messages being presented.

When describing the messages in the play, respondents connected the messages together. They could picture everything in a sequence; getting a cow, using manure to fertilize soil or planting trees to use as green manures, planting high yielding crops such as beans and staking beans using newly planted trees, and, in the end, being able to eat better. This suggests that this is really a systems approach to technology transfer. Through a story, one can see a change in lifestyle and the activities which bring about the changes. Connecting an action (like planting climbing beans) to an emotion (happiness) seemed to be effective.

Agriculture is not purely a technical activity but an activity that has social, economical, political and physical dimensions. Constraints are not only environmental or due to land, labor and capital. An agriculturist's social relations affect the opportunities they have within and beyond the household (Cornwall & Scoones in Cornwall *et al.*, 1993).

Therefore, it is important that people see the connections candidly and drama provides a means in which to display the relationships directly.

Adoption

The evaluation does show that there was a certain degree of adoption of the new technologies promoted in the drama. Of those who watched the drama, 65 percent said they have made a change in their agricultural practice because of the drama. After the drama, 39 percent of the respondents planted climbing beans, 36 percent did not, and 25 percent were already growing climbing beans. The main reason for not growing climbing bean was due to lack of seed (27 percent), no land (13 percent), and only 5 percent stated that staking was the main reason. The main reason to grow the climbing bean for both the new adopters and those already growing climbing beans was because of its high yield.

After the drama, 48 percent of respondent said they planted trees, 18 percent did not plant and 34 percent had already planted trees. In regards to the community's drinking habits, 39 percent felt that there had been a decrease in drinking, 48 percent said there was no change and 14 percent did not know. Other men that were interviewed at the local bar stated that drinking had not necessarily decreased but they were trying to start drinking later in the day. One young respondent mentioned that after the drama, her father had stopped physically abusing her mother.

In order to see if the drama sparked initiative to seek out more information about issues raised in the drama, participants were asked if they had contacted an organization or government official for more information after watching the drama. The results show that few were motivated to seek more information. After the drama, 18 percent sought more information, 80 percent did not, and two percent were already in contact with an organization or government official.

To investigate the flow of information, the respondents who attended the drama were asked if they had told others about the presentation and over 75 percent responded that they had. A small percentage (18 percent) of those who did not attend heard all the main messages from someone who had attended; however, most only heard that a theater group had come (47 percent) and some did not even know that a group had performed (35 percent).

It is difficult to measure reasons that explain a change in behavior. Even though the respondents were asked if they changed or started a new practice because of the drama, there are always other factors which influence adoption.

There were two communities studied which had NGOs working on similar issues disseminated in the play in the community. In both of these communities, there was a slightly higher implementation rate than in the two communities where there were no NGOs working.

Farmers themselves mentioned lack of seed as the main reason as to why they did not grow climbing beans after the drama. Not only is it difficult to get climbing bean seeds, project organizers promised the communities that they would bring seed to them a week after the performances. The organizers were not prepared to distribute on a mass level and in the end only gave to a few groups. Hence, most villagers were still waiting 10 months later for seeds to be brought to them.

What was also investigated were the other changes in individuals or communities as a result of the drama. Through interviews with the Abekundire Women's Group other unexpected benefits from the drama project were discovered. The women had been working with AFRENA-ICRAF since 1990 and were grateful for the work that ICRAF had done with them. They wanted to share the knowledge they had gained from this relationship and drama allowed them to relate their experience to other farmers. Many of the women gained self-confidence by performing in front of a large audience. The group has become highly revered in the community; even by men. Although these were not the goals of the project, these elements are extremely important in any community development project.

Other community groups were inspired by the Abekundire Women's Group to start their own drama groups. As more local drama groups form, the more sustainable the extension method could become.

Financial Analysis

When evaluating the effectiveness of a tool, the financial aspect is important to examine. The major costs for this project included the script writing, training, transportation to presentations, props, per diems, advertising, seed distribution and an evaluation. The total cost of the project was US\$20,000. The results from this analysis, although necessary in project planning, are not entirely accurate as the cost of initial training was a significant cost of the project and some of the money was not spent as intended in the original proposal.

A more accurate analysis would be to estimate the charges of a semi-professional drama group, with an average attendance. A local semi-professional drama group charges 150,000 Ugandan Shillings (roughly US\$150) per performance. If the attendance is between 600 to 4,000 people, the cost is 38 to 250 Ugandan Shillings per audience member (US\$0.03 to 0.23 per audience member).

Radio is most likely the only other feasible method which reaches a large audience. However, in Uganda, agricultural radio programs are seldom listened to by the main agriculturists, women, because of the timing of the program and the full workload of women (Mutiibwa in Abidi, 1990).

This analysis does not include the additional benefits gained by the local actors, the potential change in information flow between farmers and researchers, nor the benefits obtained resulting from strengthening a traditional custom.

PROJECT EVALUATION SUMMARY

Overall, this study suggests that drama is both an effective and appropriate method of extension in this district. It is effective because it is able to touch a large number of people within a short time. In a district where there are few extension workers and many farmers, as is the case in Kabale, it is an efficient method. Moreover, there is a high rate of learning due to the drama and a relatively high implementation rate after watching the drama. The beneficiaries are from all sectors of the community and the method does not exclude certain people, making it an appropriate extension method. The following table highlights some of the strengths and weaknesses of the Drama as a Technology Transfer Project.

STRENGTHS

- ◆ fulfills the need for extension
- ◆ large number of beneficiaries
- ◆ does not exclude people
- ◆ audience and actors learned about issues that are important to them
- ◆ high implementation rate
- ◆ most messages that were discussed were very relevant to the audience
- ◆ actors gained self-confidence and respect within community
- ◆ created discussion within community about issues that are difficult to discuss
- ◆ encouraged and motivated farmers

WEAKNESSES

- ◇ message design was not participatory resulting in some inaccurate messages
- ◇ the project plan did not provide an opportunity to increase communication between researcher and farmer
- ◇ negative repercussion of ‘broken promise syndrome’
- ◇ some messages did not address key issues
- ◇ sustainability of dissemination method is questionable

Recommendations

Taking into consideration the lessons learned from the project evaluation, the following recommendations are made for consideration when planning community based projects involving drama. Some of the recommendations apply specifically to this project while other are more general.

Messages

As drama can be a powerfully influential tool, it is important that the messages disseminated are correct. Therefore, a check system should be installed in the project plan so that before a drama is presented, all of the technical messages are verified by a reliable source. In addition, several options to solutions should be included in the drama instead of one solution. This would reflect the complex decision making process that families go through. For example, in the case of Kabale, the play could depict women improving their lives in different ways: one woman stopping root rot by improving soil fertility, another woman planting climbing beans, and another woman growing potatoes and buying beans from the profits.

Another idea would be to show a community which experiments, learns from experimenting, and disseminates information to other communities. This would ideally build up support and self-confidence of farmers doing their own experiments and putting value into the solutions that they come to. Another option would be to depict a community forming a group which meets to solve community problems and to seek information collectively.

The more people involved in designing the messages, the more appropriate and relevant the messages will be. In the case of *Ekikambi*, some of the important messages for local communities that were not incorporated into the script were ‘how to get rid of birds which are attacking the climbing bean plants’ and ‘where farmers can buy/exchange climbing bean seeds.’

Follow Up

In order to ensure that the messages disseminated can be implemented, it is important to plan that all the necessary elements are available to the audience members. In this case, climbing bean seed was not available after the performances. One of the main reasons given by local farmers for not planting climbing beans was due to lack of seed. Therefore, seed should be sold by the drama group, the location and sources of climbing bean seeds should be presented in the drama and the audience, especially those buying seeds, should be encouraged to exchange or share some of their seed at first harvest. For future research on the impact of drama and as a means of monitoring the project, the drama group should keep records of those who have bought seeds.

Performance

To build on making the play more real for the audience, actors should incorporate local names in the play. In order to get and keep the audience’s attention, there should be greater interaction with the audience by inviting the audience to help determine the final

solution, asking the audience for advice, and having a question and answer period at the end of the performance.

The drama should be performed on a day when most people are able to attend. In the Kabale context, performances on market days or a Sunday ensures that women are present (Sunday is usually the only day that women do not cultivate) and that there is as large an audience as possible.

NGOs working in the community should be invited to the performance so they are aware of the messages that are presented and become familiar with the method of dissemination. As previously stated, drama is most effective as a complementary extension tool.

Advertising

The performance should be advertised at least 2 weeks before the performance. The church and local market are effective venues for advertising.

Advertise the fact that small quantities of seed will be sold after the performances, so people can come prepared to buy.

Training

In order for a local drama group to take complete responsibility of the drama project, there needs to be training components which include logistics of presenting a drama (transport, sound system, advertisement) and how to manage a budget.

Abekundire Women's Group requests training in the areas of stage management and costume design.

Payment

Those receiving payment should not receive payment until there is proof (letter from Community Chairman or chair of drama group) that the service has been rendered. The amount of money to carry out the performance will need to be sent beforehand but the service fee should be held back.

FUTURE OPTIONS

Based on the lessons stated above and from other evaluations of drama extension projects, three options of how research institutions can use drama within their programs are suggested. Each option involves drama, yet uses this mode of communication differently. The three options represent different theories of development, different theories of communication and different forms of drama. Table 3 illustrates an outline of each option. Obviously, there are many different research and extension projects that can use drama, and the three options suggested are not meant to be exhaustive.

Option 1: Researcher Driven

Option 1 builds upon the lessons learned in the drama project. The objective is to disseminate complementary agricultural messages to as many people as possible and to a wide variety of people, as opposed to a certain segment of society. The messages are designed by agricultural centers and a local drama group is employed to incorporate the messages into a play and perform the drama. The role of the researcher is to develop the information package to be presented, explain it to the drama group and possibly to be available as a resource person (in person or by phone). While this is the cheapest and least time consuming of the three options; it is also the least sustainable because there are no check points within the plan to ensure that the community's needs are being met.

Option 2: Actor/Farmer Driven

Option 2 is a longer process in which agricultural scientists work with a local drama group on some on-farm trials. The scientist helps the group start a bean seed distribution center and an agroforestry tree nursery. From the experiments and from consultation with scientists, the group designs a skit that incorporates these messages. After each performance, a question and answer period is held when audience members ask the actors questions. From their agricultural experience, the actors can either try to answer the questions themselves, or they can direct the person to a more informed source. The questions and answers are recorded and passed back to scientists, keeping the scientist informed about current issues. Over time, this option may become self-sustaining if the drama group is able to establish its own bean distribution center and tree nursery, and can market themselves to NGOs as a complementary extension service.

Option 2 could be used in combination with current Farmer Participatory Research (FPR). As part of the dissemination stage of FPR, farmers could be introduced to the idea of drama as a method for passing on their research results to other farmers, as well as to researchers.

The advantage of Option 2 is that the messages are created from first hand experience. In addition, the partnership formed between farmers/actors and researchers is ultimately an equal relationship. Initially, the farmer/actors will be gaining confidence in their agricultural knowledge through their own experiments and consultation with scientists. Gradually, information should flow evenly between the two sources.

Questions and answers should be recorded by the drama group and presented to all the scientists involved. This provides feedback to the scientists keeping them informed of current subsistence agricultural issues.

The disadvantage is that this option is extremely time consuming for researchers, and one researcher would only be able to carry out this option in one or two pilot sites.

Option 3: Community Driven

Option 3 uses drama not as a dissemination tool but as a facilitation tool. It is based on the idea of popular theater, where a community uses role play or psychodrama to identify community issues, roots of problems and action plans. The focus of popular theater is to integrate the local culture of a community with community-identified development needs. Role playing is useful in that there are many things which we know (or know how to do) but which cannot be stated.

The agricultural research institute is not directly involved, although the problems and solutions identified by each community could be shared with research centers so that researchers become aware of current issues. The main role of the institute is to support NGOs who use this method. The rationale is that if an agricultural center takes a true systems approach, then supporting a community dealing with various problems in its own systems will in time result in a positive impact on the entire system. Seeing how a community handles problems can be a learning process for scientists as well.

Option 3 is different from the first two options in that researchers support drama for research and community development purposes and not for dissemination purposes. The flow of information is mainly among farmers and from farmers to the researcher; flows of information are not from the researcher to the farmer.

One barrier to overcome in the Ugandan context would be to find a qualified facilitator of the process. Drama is traditionally used as entertainment and education, although there is a program at Makerere University which does teach some psychodrama. The sustainability of the option depends on how much responsibility the community takes with the process and the final action plan. If there is little community interest, then the process will be dependent upon the NGO.

Community Involvement

It has been argued that, in order to have an effective drama project, each community needs to be visited and key people selected to determine exactly what the plot should consist of and the messages that are needed for that community. However, this argument can be refuted for two reasons. Firstly, a community visit will not result in an understanding all of the issues that are felt in that community. Also, trying to represent all the issues of a community is impossible in one play. Secondly, people interpret messages to fit their own reality. Therefore, even though a message is intended to teach a specific lesson, the audience members will alter it so it is relevant to them. The reality of trying to come up with a skit for each community which incorporates the main issues of that community is very difficult and time consuming. PRA exercises in various recent reports highlight similar problems across the district. If an organization will go to the expense and time to visit each community and do PRAs in each community, then it would seem more appropriate to opt for Option 3, where the community uses role play.

NGO Involvement in Options 1 and 2

As stated earlier, drama is most effective as a complementary extension tool. The importance of working with, rather than against extension agencies including NGOs is stressed. The trust between a community and an extension agent could be broken if a drama is presented which gives out false messages or ones that contradict the extension agent. As well, if bean seeds are distributed for free after the drama, the community may look negatively on the agent who was not able, or does not agree with, giving out free handouts. Moreover, other work by CIAT strongly suggests that it is unnecessary to give seed away free of charge except in relief situations (David, Kasozi and Wortmann, 1997).

If a research institute wants to disseminate information through drama, a mail-out should be distributed to all NGO and government extension agencies in the area describing the supportive intent of the drama project. A full description of the play, including all of the technical messages, social messages and information on seed sales would be distributed. The supportive objective should be stressed. The extension agents can then be asked if they wish that the drama be performed in one of their communities.

The NGO should send back a reply stating in which of the communities that they work would they like the drama performed. Once the communities are listed, the drama project coordinator could choose, for example, half NGO supported communities and half non-NGO supported communities. A list of the communities where the drama would be presented a year in advance is distributed to all NGOs and government extension agents. This list should be distributed, complete with before-drama visit dates and performance dates, to all the NGOs and government extension workers in the area.

In communities where there are NGOs, the actors would go out with the extension agents in the pre-performance visit and the extension agent would be encouraged to attend the play as well.

CONCLUSIONS

Drama has proven to be an effective dissemination tool for research centers and agriculture NGOs. One of its greatest attributes is that it can reach a large number of people in a short time for a reasonably low cost. It has the potential to spark discussion and innovation. Through drama, one is able to visually connect concepts together and to see how new technologies can fit into and, hopefully, improve agricultural communities. For example, one can see a greater degree of household security as a result of higher production of beans. Drama can be even more effective if the messages are created with greater participation of stakeholders, and if the tool is used in combination with other extension tools. In countries where community drama groups are prevalent, drama as an agriculture extension tool is a viable option for research and extension agencies.

Table 3: Drama Options

OPTIONS	Option 1: Researcher Driven	Option 2: Actor/Farmer Driven	Option 3- Community Driven
Objective	Build awareness of climbing beans among rural subsistence farmers	Disseminate knowledge learned while doing on-farm trials through drama	Help communities solve agricultural problems which are relevant to them
Message Design	Researchers	Farmers design messages from their experience in climbing beans and sessions with bean researchers. Message checked by researchers before dissemination.	No planned message. Messages come from the community members acting out issues that are important to them, and possible solutions.
Train Local Drama Group	Acting and management	Acting and management	No training
Community Visit before Performance	Short – to advertise drama and to find names of locals to add to play	Short -- to advertise drama and to find of locals to add to play	Long -- to assess if community wants to go through process
Connection with local NGO	Ideal but not necessary	Ideal but not necessary	Necessary
Performance	Local drama group performs.	Local drama group performs.	Local community members do role plays
Role of Audience	Partial involvement	Partial involvement	Actors
After Performance	Possible follow-up if there is NGO involvement	Question and Answer session	Plan of Action and follow-up from NGO
Seed Distribution	Drama group sells climbing bean seed (bought)	Drama group sells climbing bean seed (bought and grown)	Only sell seed if the community has identified beans as a solution to problems.
Potential Results	Large audience attendance. Learning and implementation of scientist's work	Large audience attendance Relevant messages Scientists learn from farmers Learning and implementation of farmer's work	Community continues to solve its issues
Strengths	Minimal work for researchers. Many communities contacted	More sustainable than option 1 as actors become knowledgeable about whole process Building up confidence of local farmers (actors) Many communities contacted	Community driven
Weaknesses and Risks	Drama group not capable of being 'extension agents'. Least sustainable. Irrelevant messages	Time consuming for researcher	Time consuming for actors, community members, NGO staff. Possibly NGO dependent. Not sure if addressing the needs of entire community. Need PRA skills.
Type of Theater	Theater in Development	Pseudo Theater for Development	Popular Theater, Role Play, Psychodrama. Theater for Development.
Communication Model	Linear Model	Interactive Model	Interactive Model

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PUBLICATIONS OF THE NETWORK ON BEAN RESEARCH IN AFRICA

Workshop Series

- No. 1. Proceeding of the Bean Fly Workshop, Arusha, Tanzania, 16-20 November 1986.
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- No. 4. Proceeding of a Workshop on Bean Varietal Improvement in Africa, Maseru, Lesotho, 30 January-2 February 1989.
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- No. 6. Proceedings of First SADCC Regional Bean Research Workshop, Mbabane, Swaziland, 4-7 October 1989.
- No. 7. Proceedings of Second Workshop on Bean Research in Eastern Africa, Nairobi, 5-8 March 1990.
- No. 8. Actes de l'Atelier sur la Fixation Biologique d'Azote du Haricot en Afrique, Rubona, Rwanda, 27-29 October 1988.
- No. 9. Actes du Quatrieme Seminaire Regional sur L'Amelioration du Haricot dans la Region des Grands Lacs, Bukavu, Zaire, 21-25 Novembre 1988.
- No. 10. Proceeding of a Workshop on National Research Planning for Bean Production in Uganda, Kampala, Uganda, 28 January-1 February 1991.
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- No. 13. Proceeding of a Working Group Meeting on Virus Diseases of Beans and Cowpea in Africa, Kampala, Uganda, January 17-21, 1990
- No. 14. Proceeding of the First Meeting of the SADCC/CIAT Working Group on Drought in Beans, Harare, Zimbabwe, May 9-11, 1988.
- No. 15. Proceeding of the First Pan-African Working Group Meeting on Anthracnose of Beans, Ambo, Ethiopia, February 17-23, 1991.
- No. 16. Actes du Cinquieme Seminaire Regional sur l'Amelioration du Haricot dans la Region des Grands Lacs, Bujumbura, Burundi, 13-18 Novembre, 1989.
- No. 17. Actes du Sixieme Seminaire Regional sur l'Amelioration du Haricot dans la Region des Grands lacs, 21-25 Janvier 1991.

- No. 18. Actes de la Conference sur le Lancement des Varietes, la Production et la Distribution de Semaines de Haricot dans la Region des Grands Lacs, Goma, Zaire, 2-4 Novembre 1989.
- No. 19. Recommendations of Working Groups on Cropping Systems and Soil Fertility Research for Bean Production Systems, Nairobi, Kenya, 12-14 February 1990.
- No. 20. Proceeding of First African Bean Pathology Workshop, Kigali, Rwanda, 14-16 November, 1987.
- No. 21. Soil Fertility Research for Maize and Bean Production Systems of the Eastern Africa Highlands: Proceedings of a Working Group Meeting, Thika, Kenya, 1-4 September 1992.
- No. 22. Actes de l'Atelier sur les Strategies de Selection Varietale dans la Region des Grands Lacs, Kigali, Rwanda, 17-20 Janvier 1991.
- No. 23. Proceeding of the Pan-African Pathology Working Group Meeting, Thika, Kenya, 26-30 May 1992.
- No. 24. Proceeding of a Bean Research Planning in Tanzania: Uyole Research Centre, 18-24 May 1992.
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- No. 34. Pan-Africa Working Group on Bacterial and Viral Diseases of Bean, Kampala, Uganda, 13-16 June 1994.
- No. 35. Seminaire Regional Restreint du RESAPAC tenu a Bukavu du 25 au 27 Janvier 1995.

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