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A USABILITY STUDY OF PRINTED PAMPHLETS OF THE AGRICULTURAL RESEARCH COUNCIL (ARC) IN THE RURAL COMMUNITY OF GA-MATLALA

Mini-Dissertation

by

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Should this study contribute in any way towards the improvement of printed pamphlets of the ARC intended for development communication, it will have fulfilled the hopes of the researcher.

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ABSTRACT

A USABILITY STUDY OF PRINTED PAMPHLETS OF THE ARC IN THE RURAL COMMUNITY OF GA-MATLALA

Brochures are often used to disseminate information to disadvantaged communities. This study attempts to evaluate the usability and effectiveness of information brochures developed by the Agricultural Research Council (ARC) for development communication among developing communities on guidelines on how to grow Bambara groundnut and the cultivation of maize in a South African development context. The main objectives of the study were to establish the target audience's comprehension, usability and effectiveness of the selected pamphlets. The study also attempted to examine the influence of the demographic and socio-economic factors on the effective communication of information.

Usability here refers to the extent to which communication materials such as information pamphlets can be used by specific users to achieve specific goals namely effectiveness, efficiency and satisfaction in a specified context.

This study's main focus is on the distinguishing characteristics of reader focus text evaluation method as outlined in Schriver (1989). Reader focus text evaluation method was used to evaluate the usability of pamphlets in the research conducted among

small-scale farmers of Tibane and Kordon at Ga-Matlala district in the Limpopo Province

The two pamphlets were evaluated with the intention to establish whether the users understood the contents and whether the message was effectively communicated or not.

The findings of the study indicate that the information disseminated by the ARC agricultural pamphlets is not effectively communicated because of the language and the arrangement of pictures or frames used in the pamphlets, which confused most illiterate participants. This ineffective dissemination of development information in rural communities needs to be revised to ensure its effectiveness.

ABBREVIATIONS

ARC- Agricultural Research Council

DC- Development Communication

DSC- Development Support Communication

PC- Participatory Communication

SA- South Africa

UN- United nations

UNESCO- United Nations Educational, Scientific and Cultural Organization

PAIM- Print Agricultural Information Material

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CHAPTER 1: BACKGROUND OF STUDY

1.1. INTRODUCTION

Information has been identified as one of the resources required for the improvement of agricultural production. Information is a resource that must be acquired and used in order to make informed decisions. Every sector of the population engaged in agriculture needs information.

Information is important for farmers to maintain livelihoods or to gain a competitive edge in a rapidly changing economic and production environment where traditional farming methods might be insufficient to meet new demands (Morton & Matthewman, 1996).

Correa *et al* (1997:6) also indicates that although farmers usually have a rich knowledge of local conditions and valuable practical experience of how best to successfully exploit their environment, they require innovative information (generated from research and development) and timely information to cope with exigencies of weather and pestilence.

Mass media, especially print is a popular means of disseminating agricultural information. Print Agricultural Information Materials (PAIMs) such as information brochures and leaflets, booklets and newsletters are commonly used by extension agencies to disseminate information to farmers (Velasco, Kowalski and Lowe,

1996). Morris (2000) identified 138 PAIMs produced in South Africa (SA) to provide information to communal livestock farmers or advisors, and Morris (2001) indicates that the quality and relevance of these publications for subsistence and small-scale farmers were, however not assessed. Bembridge (1997) also surveyed the availability of printed extension materials aimed at small-scale farmers in South Africa and found the quality of available publications to be variable and their distribution ad hoc. Perraton (1983) emphasized that assessing the quality of PAIMs before dissemination is crucial to ensure that they effectively convey their intended message.

In the light of the fact that printed media is often used to disseminate information to small-scale farmers, the review addresses the usability and effectiveness of ARC pamphlets in disseminating agricultural information to rural small-scale farmers.

1.2. THE RESEARCH PROBLEM

Referring to South African context and to the role of information in capacity building and for development, many publications on small-scale farming are produced but there is little evidence of farmers referring to and implementing information found in printed agricultural materials. This was confirmed by Bembridge's (1997) research that despite the volume of printed agricultural materials

available in SA (produced by non-governmental organizations and South African government through National and Provincial Departments of Agriculture) only a small proportion of the country's 1,25 million small-scale farmers reportedly have access to written information on agriculture. Bembridge (1997) further indicates that printed agricultural materials appear to have had little impact on South Africa's small-scale farmers due to the reason that include the incostant quality of publications and their ad hoc distribution.

What has thus emerged as a problem is that the Agricultural Research Council (ARC) produces many pamphlets for disseminating information to small-scale farmers around the country. The question that arises is whether farmers understand this information and do these pamphlets successfully communicate the message that was intended.

Based on the above question, the main research question is: Are ARC pamphlets prepared to inform rural small-scale farmers about the best agricultural practices effective?

The main research question can further be answered by asking the following sub–questions:

- How do the target audience understand the facts (comprehension) presented in the pamphlets;
- How do target audience perceive the coding and visual designs (attractiveness) of the pamphlets;

- What do target audience feel about the usability of the information provided (attitude);
- Did the demographic and socio-economical factors play any role in the effective communication of the information; and
- How can these pamphlets be improved?

1.3. THE AIM OF STUDY

The purpose of this study is to evaluate the ARC's pamphlets and to determine whether they communicate the intended messages to rural small-scale farmers in South Africa or whether there are demographic and socio-economic factors that act as barriers to effective communication in a development context.

It is the researcher's hopes to find out whether pamphlets have disseminated the intended message and whether the target audience has understood the message or not. If not, this study's recommendations will help to improve the ARC pamphlets to meet the needs of small-scale farmers of developing communities in South Africa.

1.4. SCOPE AND LIMITATIONS OF THE STUDY

The study focuses primarily on evaluating printed agricultural information materials developed by ARC for disseminating development information to rural small-scale farmers in a South African context.

The study is limited to the usability and effectiveness of printed agricultural information materials, that is, information brochures and pamphlets, and does not address the usability of agricultural information materials in other format or media like radio and television. This study also did not evaluate the literacy level, training and skills of the farmers.

1.5. CLARIFICATION OF TERMS

1.5.1. Communication

Communication is the interaction between two or more people.

Mody (1991) refers to the word communication as a Latin word which means “common”. In a communication sphere the sender and the receiver have to reach for a common understanding for the communication process to be successful. Steyn & Nunes (2001) and Rogers (1995) support Mody’s understanding of the word communication. Rogers (1995) defines communication as a process by which two or more people share knowledge so as to

arrive at a common understanding, while Steyn and Nunes (2001:30) define communication "as a process of negotiating and exchanging meaning in which common consensus is reached".

1.5.2. Community development

Community development is a collective activity where a group of people that share mutual interests and concerns become aware of their needs and resources, and act together to improve their situation (Steyn & Nunes, 2001:30). It is the social, economic and cultural upliftment of a group of people residing together.

With reference to this study, community development is an attempt to improve the quality of life of emerging farmers, and it specifically focuses on the dissemination of information in order to improve their farming practices.

1.5.3. Development

Developing an individual is the same as developing a whole community. Development is a process of change in the lives of people.

Development is the process of change in an area that results in an improvement in the living conditions that affects people's lives. Therefore, it is an attempt to improve the quality of life of people. This statement is supported by different theorists like Astle

(1989:13) who sees development as a process or a condition or the combination of the two. Boon (1992:65) describes development as "a complex process that to a large extent depends upon the internal innovative capabilities of individuals and the community in a context of established norms, opinions and values".

In this study development will be regarded as a process of holistic change for the better in the lives of people living in rural disadvantaged communities.

1.5.4. Development communication

Effective communication is important if development efforts are to succeed. Agunga (1998) defines development communication (DC) as the systematic utilization of appropriate communication channels and techniques to increase people's participation in development and to inform, motivate and train rural populations, mainly at grassroots.

Bessette (1996) describes DC as the process by which people become leading actors in their own development, which allows them to go from being recipients of external development to generators of their own development. Malan (1998:52) also sees DC as all forms of communication that are used for the improvement of an individual, community or a country's material, cultural, spiritual, social and other conditions.

1.5.5. Development Support Communication

Childers (1976:46) defines DSC as a discipline in development planning and implementation in which more adequate account is taken of human behavioural factors in the design of development projects and their objectives.

1.5.6. Information

Defining the term information is difficult because it is a subjective term that can be defined differently in different contexts. In this study the researcher will refer to "information" as per Boon's (1992) definition". He defines information as any input that can be processed intellectually or cognitively for the development of meaning. Meaning is an indication of something that contributes to problem solving and decision-making in the context of development.

In a development context such as that of this study, information is the interactive element between the developing communities and the developers. Information is communicated via different media to people in order for them to receive a message that can improve their standard of living.

1.5.7. Participatory communication

This definition was adopted by UNESCO (in Mody, 1996:30) who defines participatory communication as the social process in which groups with common interests jointly construct a message oriented to the improvement of their existential situation and to the change

of the unjust social structure. In this study participatory communication will refer to the participation of the people in the designing of development messages.

1.5.8. Printed media

Diedericks (1990) refers to printed media as documented information like hard cover books, paper backs, periodicals, newspapers, magazines, pamphlets or brochures and graphics or visual publications (such as photo stories and comics) which are used to communicate with the public. The printed texts, which are evaluated in this study, are the ARC's pamphlets or brochures.

1.5.9. Usability

Quesenbery (2001:1) defines usability as the extent to which information materials are used by specific users to achieve specific goals with effectiveness, efficiency and satisfaction in a specified context of use.

In this study usability will be referring to the ease of use of printed messages by target audiences for development.

1.6. STRUCTURE OF THE STUDY

The background of the study **(Chapter 1)** this chapter gives the background information of the study on the usability and effectiveness of printed agricultural information materials to rural

small-scale farmers. This chapter also described the research problem, aim of the study and clarification of terms.

The literature review (**Chapter 2)** gives an overview of the literature regarding the role of communication in development, the role of information in community development, the relationship between information and development communication, the importance of participatory communication in development, the possible ways of ensuring that the information disseminated is understood, printed media as a tool for disseminating information to rural small scale farmers, and the usability testing of printed materials to small scale farmers.

The research procedure (**Chapter 3)** comprises of the research methodology explaining the methods used to collect data from farmers and the method of sampling.

The analysis of data and findings (**Chapter 4**) consists of the analysis of data and also gives an indication of the degree to which the study contributes towards the understanding of the problems underlying the dissemination of information to rural small-scale farmers. This chapter also provides the reader with the general outcomes of the research conducted and recommends solutions to the problems identified.

The conclusions and recommendations (**Chapter 5**) contain the assessment of the study's findings and the provision of the possible solutions for future production of printed pamphlets, which will suit the target audience.

1.7. SUMMARY

In this chapter the background for conducting the study on the usability and effectiveness of agricultural information materials amongst rural small-scale farmers in Limpopo province was given. The research problem, the aim, the scope and limitations of the study are stated, the clarifications of terms used are also given.

The next chapter discusses the literature review consulted for this study.

CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

In this chapter the role of communication in development as well as the role of information in community development is discussed. The relationship between information and development communication and the importance of participatory communication in development is also explained. The possible ways of ensuring that the information disseminated is understood are outlined, the printed media as a tool for disseminating information is explained, and the usability testing of printed texts by rural small-scale farmers is explained.

2.2. THE ROLE OF COMMUNICATION IN DEVELOPMENT

Communication is the key to human development and it serves as an interactive tool for development. Melkote (1991:270) indicates that communication has played an important role in shaping the development patterns over the last decades and it is bound to play an increasingly important role now and in years to come. Melkote (1991) further indicates that communication can help in the

development of the community's culture of identity, act as a vehicle for people's self expression or serve as a tool for the diagnosis of a community's problems.

Communication also plays a decisive role in promoting human development in today's new climate of social change. As the world moves towards greater democracy, decentralization and market economy, conditions are becoming more favourable for people to start steering their own course of change.

Singh (in Nair and White, 1994:120) indicates that communication facilitates the flow of information that can bring about a far-reaching transformation of social and economic structures, institutions, relationships and process development.

Agunga (1998:25) indicates that communication has a major role to play in development because it is a means that helps develop projects to work better. According to Agunga (1998) communication serves as a basis for development because it is a process of creating an understanding. It stimulates people's awareness, participation and capabilities for policy development to encourage effective planning and implementation of communication programmes. Furthermore Agunga indicates that the need for communication in development has increased with the growing sophistication of the development process.

Development cannot take place without participation and it is also impossible to have participation without communication. Yet communication is hardly present in the strategies and policies of

most donor agencies (Agunga, 1998:224). Diouf (1994) also stresses that communication is a key to human development because people's participation requires communication. It enables planners, when identifying and formulating development programmes, to consult with people in order to take into account their needs, attitudes and traditional knowledge.

The previous paradigm of DC was primarily based on the transmission of information or the transfer of knowledge. It was a one-way process that neglected the role of communication in development. The mass media used in the DC model, was hierarchical, centrally controlled, and a one-way, top down channel for information dissemination (Mody, 1991:48).

From an analytical perspective mass media is programmed by professional producers to meet the needs of the government and advertisers rather than their audiences.

Today it is widely accepted that development communication goes hand in hand with people participation and empowerment. Communication creates and provides opportunities for people to develop and use their potential.

Development Support communication (DSC) is the reaction against the old DC model. DSC is a viable strategy for making development programmes work better within the limited sphere. This model recognizes the role that DSC experts play in facilitating the communication process and helps in the development of a

community's cultural identity since it acts as a vehicle for people's self-expression or a tool for diagnosing the community' problems.

The DSC model of Agunga (1998) has the potential to help in the realization of human development because it stresses the role of communication as the integrator in the struggle to achieve holistic and participative development. DSC is also designed to encourage the participation of beneficiaries in projects and ensures its execution and success.

2.3. THE ROLE OF INFORMATION IN COMMUNITY DEVELOPMENT

Information is a valuable resource for development in communities, because communities need information for health, business, sanitation, agriculture and personal improvement. Generally people also need information for socialization, task performance, decision-making and problem solving. Seeing that information plays a central role in the activities named above, living standards will deteriorate without information. Decisive innovations depend on people being provided with the right information at the right time in the most appropriate form.

Before information can be used in the process of development, value must be added because information in development is of a changeable nature that varies according to the needs of users and

the circumstances in which people exist. When looking at the relationship between information and development, one has to draw a clear distinction between information, data and knowledge, because what one person regards as information can be data to one and knowledge to another (Boon, 1992).

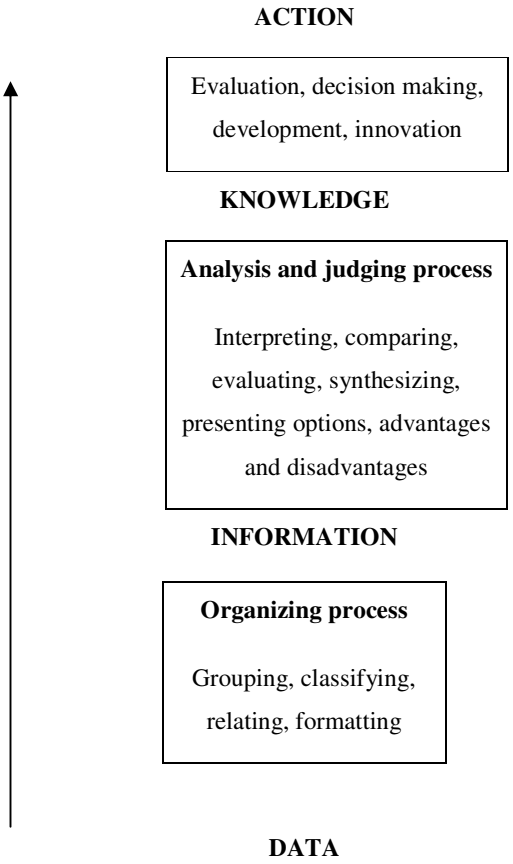
- Data are unorganized pieces of information and these pieces carry no meaning on their own. They become information when a relationship has been established amongst them.
- Information is data that is collected, organized and processed to form meaning.
- Knowledge is stored information in the mind; it is the sense of knowing.

Based on the above distinction between data, information and knowledge, the exposition of the relationship between these concepts is that data is converted to applicable information; information leads to knowledge and then to action such as decision-making.

The above distinction is demonstrated by the value-adding model of Boon (1992) below.

Figure 2.1: VALUE ADDING MODEL

(Boon, 1992)



According to Ncongwane and Nqotole (2000) information is a resource that can be exploited to the benefit of the nation. McConnell (1996) supports Ncongwane and Nqotole (2000) that information also hold a great potential as a powerful and reusable resource for development, because it is "an essential input, catalyst and product of change". McConnell (1996) sees information as

precious fuel in the process of transformation in developing societies.

Information provision has been termed a formidable factor in determining whether developmental efforts in Africa are successful or not. Because information is implicit in the existence of man and the fulfillment of everyday needs of the society, it is even more important in a rural developmental context.

With reference to the status of information provision to the rural population of South Africa, Moyo (1995:62) points out that there is an alarming information gap. In South Africa information is becoming increasingly available to urban-based organizations through the media and not to rural areas.

With reference to the rural African situation and the lack of evidence about effective information transfer methods Rosenberg (1993:34) comments on how little research has been done in the East and Central African countries on the best way of providing suitable information to these countries. Correa (1995:92) also points out that while there is no doubt that a peasant considers information as being essential to development he queries the manner in which information is presently generated, formulated and presented.

Chaka (2003:44) indicates that South African rural areas have the least access per capita to development resources, including information. He further states that the fact that these disadvantaged

people are under resourced in many ways affect their ability to access information.

According to Burton (1998:94) information is important to participation and empowerment and it is an essential resource for building knowledge, training, engaging in dialogue and decision-making. Only when people have a full understanding of the message conveyed information could increase their participation in development through informing and training.

If there is a low quantity of usable information in rural communities, the gap between community development and people's mobilization and participation widens. To close the gap between development and people's participation, information provided for development, therefore, must be relevant and accessible. Akhtar (1990:35) indicates that if information is irrelevant, general and unsuitable it leads to poor decision- making and the undertaking of impracticable projects.

Sturges & Neill (1990:39) indicate that there are many examples of development projects in the area of agricultural development, which have failed as a result of insufficient or unusable information provided. This statement is also supported by authors like Paez-Urdaneta (1989:182) who ascribes the failure of certain development projects to poor information infrastructure and underdeveloped information sectors; and Lau (1988:39) also indicates that the lack of information retards socio-economic

development, which in turn has a negative effect on the development of human knowledge.

Based on these factors Sturges & Neill (1990), therefore, regard information as the only one of the factors, which can contribute to the solution of the problems in developing communities.

In this study information is acknowledged as the development tool to improve living standards and bring changes to emerging farmers of rural communities. It is further assumed that for information to have an impact, it must be conveyed via a medium in which the receiver can understand the message.

2.4. THE RELATIONSHIP BETWEEN INFORMATION AND DEVELOPMENT COMMUNICATION

It has been indicated above that for effective community development people must have access to valuable information. Information is recognized as an important factor in the communication process, in the sense that there would not be any communication without information and information is worthless without it being communicated.

Communication is also needed for development. The only way people can work for a common cause, interest and improve their conditions is through the effective communication of information.

According to Agunga (1997) DC is the communication of information in a development context and it plays an important role in making development projects work better. When information is properly organized, processed and transferred through correct channels to the target audience, development can take place effectively.

DC is needed to ensure an exchange of information that can contribute to development, which can improve the quality of life of a specific target group.

2.5. THE IMPORTANCE OF PARTICIPATORY COMMUNICATION IN DEVELOPMENT

Participation is the key to development communication because for a message to be communicated successfully to the receiver and for the receiver to respond positively, the receiver should take part in the communication process.

Bessette (1996:1) indicates that "it is increasingly recognized that people's active participation is an essential component of sustainable development. Any intervention with the extent of achieving a real and sustainable improvement in the living conditions is due to failure unless the intended beneficiaries are actively involved in the process. Unless people participate in all phases of an intervention, from problem identification to research

and implementation of solutions, the likelihood that sustainable change will occur is slim".

DSC and participatory communication lie at the heart of the challenge above. People should become leading actors in their own development. Communication enables them to go from being recipients of external development interventions to generators of their own development.

People at local levels need to involve themselves more closely in the process of defining problems of development and devising alternatives based on local resources, which are in agreement with their cultural ethos.

Considering the issue of being self reliant, people need to be involved and to express their own perceptions with regard to solutions emerging from their own knowledge and resources.

The participation process involves human resource development at both the source and receiver level. The communication process in a participatory process is dialogic, horizontal, emancipatory, interactive and contextual as compared to the top-down model of DC (Malan, 1998:63). Ramanamma (in Nair and White, 1993) also indicates that participation is the key concept when considering the importance of development. He further considers the primary principle of participatory communication as the involvement of the people themselves in the design of media.

In light of the above statement it is evident that a participative approach directed at empowering individuals and communities to decide, and be involved in their own future, is essential to meaningful acceleration of change. Participatory communication has a liberative content. It aims at enabling communities to take control of their own lives.

The above statement is supported by Servaes (1995) saying that unless people themselves are the driving force of their own development, no amount of investment or provision of technology and inputs will bring about lasting improvements in their living standards.

Agunga (1998) sees these problems caused by the historical legacy of a top-down prescriptive approach to development and associated by “land out syndrome” manifested by rural inhabitants who may not have skills initiative or confidence and access to resources to adopt a self-help approach to their problems.

Participation implies a higher level of public involvement in a communication system. It includes the involvement of the public in the production process, and also in the management and planning of communication systems (Servaes, 1995).

To further this argument Servaes (1995) states that participation may not only be the representation and consultation of the public in decision-making, but also that self-management is the most advanced form of participation. In this case the public exercises the power of decision-making within communication enterprises and is

also fully involved in the formulation of communication policies and plans.

Participation in this study should imply involvement of small-scale farmers in designing the development messages and the choice of language and medium to be used when disseminating messages.

2.6. WAYS TO ENSURE THAT THE INFORMATION DISSEMINATED, IS UNDERSTOOD

To make sure that the information disseminated is understood, we must make use of proper channels of communication that encourage the circulation and sharing of information flowing from the information sources to the community or from the community to the decision making process or among the groups and communities themselves.

The information producers must ensure that they create messages that are understood by the receiver. The receiver should find the same meaning in the message as the one, which was intended by the sender. The receiver should be able to interpret the information presented in the message to empower himself for development.

The above statement is supported by Verderber's (in Steinberg, 1995) model of communication, which indicates communication as a two way, dynamic and transactional process in transmitting, and receiving and decoding messages. Verderber (1990) sees

communication within the context of a relationship between two participants who are simultaneously involved in the negotiation of meaning and also emphasizes that the creation of meaning is negotiated between the participants.

Fernades (2003:21) indicates factors one should consider when developing an understandable message.

- *Objective of the message*: Mody (1991:176) says that every production team needs to have a clear measurable objective; after the exposure of this message what is the audience supposed to know, feel or do under which conditions and how well.

- *Content:* the gap between the goal and the audience's reality should be analyzed. Limit the amount of content that goes into any single message and make sure the content is clearly stated.

- *Adapt messages*: the core of the message could be the same for both the higher and the lower socio-economic status group. The quality and the complexity of the message must be adapted to suit the lower socio-economic groups. The profile of the recipients and the recipients' needs must be established.

- *Assess the needs*: establish the needs of the messages in order to guarantee the success of the development programmes.

- *Mix message delivery channels*: Mody (1991:176) argues that very few messages will impact the audience if only a single channel carries them because each media has limited strengths. Some channels are good at introducing the subject, while others are better at giving reminders; some are good at presenting concrete details, while others are better at abstractions. The media mix will vary, depending on the message.

- *Consider illiteracy*: development messages should be appropriate to the lower socio-economic status groups. The tendency to encode messages in terms of symbols, which implies literacy, is a hindrance in development process.

Snyman (2002:47) quotes O'Sullivan *et al* (1994:50) stressing that "in the framework of reception study, communication is regarded as a negotiation and exchange of meaning, in which messages, people in cultures and reality interact so as to enable meaning to be produced or understanding to occur".

According to Snyman (2002) the relationship between text and context in reception studies is crucial. Snyman further cites Fish (1980) also emphasizing that the social and cultural context in which the messages are produced and received is very important. Snyman (2002:44) further indicates, "a text is always received within the specific social context of an interpretive community. This provides a frame of reference that determines perception and interpretation. A receiver can only interpret a text according to the

socially mediated knowledge and values of the interpretive community. Meaning is attributed to the text within a specific context".

According to Snyman (2002:45) "reception studies mostly focus on the receiver". Morley (1992) cited in Snyman (2002) supports the audience interpretation theory by stating that audience interpretations cannot be separated from the influence of the social context in which they occur.

According to Snyman (2002:46) White's (1992) approaches on audience reception or interpretation theory, includes the following:

- focus on the receiver as a creator of meaning;
- the important role of context;
- the interpretative community who, according to Lindlof (1988:102), share similar genres of interpretative common codes or intersubjective agreement;
- Morley's (1992) findings that people draw upon composite and often unrelated and even contradictory social and personal histories, in their interpretation of texts; and
- the fact that the audience's construction of meaning is often different from the meaning that the producers wanted to convey (White,1994:25).

If the social and cultural context in which messages are produced and received is important for effective

communication, one should look at the suitability of the media in which information is disseminated, as this study's focus is on the usability of printed texts in development communication in rural communities of South Africa.

2.7. PRINTED MEDIA AS A TOOL FOR DISSEMINATING INFORMATION TO RURAL SMALL-SCALE FARMERS

It has been indicated in the previous section that to make sure that the information disseminated is understood, appropriate channels of communication must be used. Print media is still regarded as the primary means whereby information is recorded, stored and transmitted in libraries and other information systems. The print media is also a common means of disseminating agricultural information in industrial and developing countries. Why is printed media an important tool for disseminating information to rural small-scale farmers? Morris (2001:16-17) outlines the following qualities as possessed by print media:

- **Portability**

  Print materials such as books and pamphlets are highly portable and easily transported from place to place so that "the message can be received in virtually in any situation" (Stewart, 1985:141). The equipment required to interact with visual media such as television is not mobile and might require an appropriate venue and specialized technology for users to hear the message.

- **Technological complexity and cost**

  Print is a low technology medium requiring no special equipment to transmit and decode its information content. It requires little technology as compared to audio and visual media to produce and store (Stewart, 1985, Sturges & Neill, 1998). Technology for producing print is widely available in urban areas.

  Mass media such as print is relatively a cheap way to broaden information access as compared to the cost of person-to-person information transmission because of high personnel costs and the expense of visiting remote areas.

- **Reviewability**

  Print materials can be used by users at any time whenever is needed. Print material is a permanent information source that remains in use as a reference for many years while

extension personnel and organizations may come and go (Bembridge, 1997).

- **Credibility**

  Bembridge (1997) and Leach (1999) indicate that people trust printed rather than verbal information because the source of information usually emanates from outside the community and the message can be seen before them in black and white.

- **Precision of expression**

  Stewart (1985) states that print can allow for a greater accuracy of content and precision of expression than media where the message depends on memory or is restrained in length or scope by the form. Print message can be clearly stated without interference and bias that may be introduced by other channels of transmission.

When choosing the appropriate medium for disseminating information, one should take the target audience into consideration because every target group (audience) is unique and has its own needs. The social-cultural context of the beneficiaries also determines the selection of appropriate communication channels to be used to disseminate information (Mody, 1991).

To decide on the best media for the information delivery campaign and to make the most effective use of the chosen media, a comprehensive profile of the target audience's information

requirement should be compiled (Morris, 2001). When examining the role of print materials in information dissemination the target audience should determine the content of the message through the expression of their needs.

The content should always be accurate, credible and appropriate, and relevant to the target audience. The aspects of content are elaborated below:

- **Accuracy**: To convey a credible message, information presented in Print Agricultural Information Materials (PAIMs) should be factually correct, evidence-based and current (Smith, 1998).

- **Appropriateness**: A thorough understanding of the social context and community characteristics and dynamics will assist in developing content that is appropriate (Smith, 1998). Betterley *et al* (2000:3) indicates that information should be appropriate to the age, gender, educational level, ethnicity, socio-economic status and lifestyle of the target audience. Smith (1998) also added that information should be made available in other languages for readers not proficient in English.

- **Relevance:** The information should address the needs and concerns of the target audience. Morris (2001) states that if the information presented reflects the needs and interests of the readers then they will be motivated to carefully consider

whether they could apply the given guidelines and recommendations in their own situation.

Although illiteracy has been cited as the major barrier to the use of printed information materials, PAIMs have been found to be useful tools in promoting sustainable agriculture and facilitating networking. Guillemette (1989:220) provides the following guidelines to design messages that would be understandable to low literate readers: `

- Simplicity in language and layout;
- Compatibility (naturalness) of technical information with reader's background and knowledge;
- Consistency (predictability) in language and layout; and
- Self-containedness of information for the reader to attain basic objectives minimizes the need for the reader inferences or integration.

The above guidelines are also emphasized by Bembridge (1991). He states that:

- The message should be relevant to the audience's needs, problems, concerns and long-term interests;
- Ideas should be reduced to the simplest possible terms, using simple illustrations such as visual aids and demonstrations;

- Concepts should be clearly defined; and
- Messages should be organized into logical stages and be presented in the local language of the intended audience.

It stands to reason that in order to develop printed materials that disseminate understandable information, one should first assess the needs and circumstances of the target audience, choose the media and tailor the content to meet the needs of the group.

2.8. USABILITY TESTING OF PRINTED TEXT TO RURAL SMALL- SCALE FARMERS

As indicated in the previous section when choosing print as a medium for information dissemination, one should take the audience into consideration. To make sure that the message conveyed is suitable and understandable by the target audience, usability testing of the message should be conducted.

Usability refers to the degree to which documentation can be effectively used by the target audience in the performance of tasks (Guillemette, 1989:217). Long (in Guillemette, 1989:59) distinguishes between general usability requirements where documentation must be usable:

- for particular readers;
- to perform specific tasks; and

- in a certain physical and social environment.

A document is reader-usable if it can be effectively used by alternate groups of readers possessing expected competences, skills and knowledge. It is task-usable if readers are able to retrieve and process needed information quickly with minimal physical or mental efforts. The document is environmental-usable, if it is accessible, when and where it is needed and also is used within the existing time and economic constraints (Guillemette, 1989:218).

Usability is essentially concerned with the process of using the documentation. One important aspect is readability, or the degree to which target readers are able to understand printed material, are able to read quickly, and find it interesting. Readability testing is necessary but an inadequate instrument for assessing usability of the material because the reader may face difficulty in locating needed information or establishing links between documented material and the task situation. The assessment of readability involves a consideration of various aspects of the reading situation, such as content, organization, format and style of documentation, reader background, skills and motivation and certain environmental variables (Guillemette, 1989).

The utilization of documentation is a function of its usability and its functionality. Functionality refers to the technical capabilities of the documentation. What readers can do with the documentation depends on the degree of its technical design, such as coverage of

relevant topics and the presence of access structures (Chaka, 2003: 25).

Quesenbery (2001:1) also defines usability as the extent to which specific receivers can use information materials with effectiveness, efficiency and satisfaction in a specified context of use.

Chaka (2003:26) outlines below four different meanings that can be described as four key requirements of usability.

- **Usability means thinking about how and why people use a product**: good technical writing, like good interaction design, focuses on the user's goals.
- **Usability means evaluation**: usability relies on user-feedback through evaluation rather than simply trusting the experiences and expertise of the designer.
- **Usability means more than just "ease of use":** usability also means effective, efficient, engaging, error tolerance and easy to learn. Interfaces such as information booklets should be evaluated against the combination of these characteristics that best describe the user's requirements for success and satisfaction.
- **Usability means user-centred design**: users are satisfied when an interface is user-centred. That is when their goals, mental models, tasks and requirements are all met. The combination of analysis, design and evaluation, all the

approaches starting from the user's point of view creates usable products.

In order to look at the suitability and value of printed information materials, it is important to evaluate them. Guillemette (1989: 22) mentions the purpose for evaluating the materials is to assess the attitude and performances of readers or documenters, judging the overall quality and various features of documentation activities and diagnosing physical and organizational factors which have an impact on the reading performance".

Schriver (1989: 238) distinguishes three types of evaluation methods based on text information, namely text focused, expert focused and reader focused text evaluation.

- **Text-focused text evaluation**

  This is an evaluation of one or more texts by an expert or writer in document design, according to predetermined criteria. The main objective is to evaluate the textual characteristics, namely content, structure, style and layout in relation to the criteria determined for the text type in question and with a clear view to the wants and needs of the particular user group.

- **Expert-focused text evaluation**

  It is an evaluation of the text by professionals with expert knowledge of audience, subject matter or text. This evaluation is aimed at subject field specialists and possibly document designers.

- **Reader-focused text evaluation**

  It is an evaluation of texts by readers from the target audience. This method concentrates on reader-text relationship in particular, on a complex of text features often referred to as usability or effectiveness (De Jong and Schellens, 1997:404). Schriver's main preference is for reader-focused evaluation. According to Schriver (1989:238) reader-focused methods have relative advantages over the other approaches. To determine the effective dissemination of information for development reader research is important because audience participation cannot be attained without it.

According to De Jong and Schellens (1997: 404) the following conditions are useful for differentiating between the focuses of various evaluation methods.

- **Comprehension**

  Readers must correctly understand the information given. When major comprehension problems arise, the wrong message or no message is communicated.

- **Application**

  This condition can be seen as an extension of the preceding one, particularly in the case of instructional documents, such as user manuals, where comprehension alone is insufficient. In addition to being able to understand the information given, readers must

also be able to apply it in a productive way and in a realistic setting.

- **Acceptance**

The intended readers should find the statements in the text as acceptable and credible as possible. Behavioural advice must be seen to be relevant and realistic, factual statement must be considered true, company policy must come across as fair and reasonable, and value judgement in the text must be endorsed.

- **Appreciation**

The readers must appreciate the way the information is presented. This condition covers various aspects such as the tone of writer-reader relationship, or the familiarity or aesthetic quality of the formulation. It also includes reader's assessment of figure illustrations and layout.

- **Relevance and completeness**

Finally a text must contain the right information for its intended readers. The information that is given must be new and relevant to the reader, and it must also be complete; readers should not be left with unanswered questions.

This study focused on how rural small-scale farmers comprehend and appreciate the effective usage of the selected ARC pamphlets.

2.9. SUMMARY

In this chapter a literature review on the role of communication in development and the role of information in community development has been explained. The relationship between information and DC as well as the importance of participatory communication has been discussed. The ways of ensuring that the information disseminated is understood were also outlined, the printed media as a tool for disseminating information to rural small-scale farmers and the usability testing of printed texts to rural small-scale farmers was also discussed.

The next chapter describes the research procedure followed in the study.

CHAPTER 3: THE RESEARCH PROCEDURE

3.1. INTRODUCTION

The aim of this study is to establish whether ARC pamphlets on the cultivation of maize and growing of Bambara groundnut are the examples of agricultural information materials used for development communication to rural small-scale farmers, and also address the issue of whether demographic and socio-economic factors are acting as barriers in development communication. The study is conducted in two areas of the Limpopo province in South Africa with the purpose of evaluating the usability and effectiveness of these ARC pamphlets to the rural small-scale farmers.

This chapter discusses the research design, methods of collecting data, analysis of data and the whole process of how the research was done.

3.2. THE RESEARCH DESIGN

A research design is described by Mouton (2001) as a plan or a blueprint of how one intends to conduct the research. Leedy (1997:93) supports the description by defining research design as the planning or the visualization of data and problems associated with the employment of that data in the entire research project.

Therefore, a research design is a preliminary plan of a research project.

Bryman (1998) describes qualitative research as a research method that attempts to understand the issues from the viewpoint of participants. He further indicates that the participants' views are not isolated from their context and an attempt is made to understand the participants' thoughts, feelings and behaviour by conducting the research in a relatively unstructured manner.

This research's approach was qualitative, committed to seeing reality from the point of view of the research participants, because sometimes meaning of events and interaction can be best understood by the actual participants in specific situations. The purpose of the qualitative research interview in this study was that of gathering descriptions of the life world of the interviewee with respect to the interpretation and the meaning of the selected pamphlets in an attempt to see the research topic from the perspective of the participants (Kvale, 1983:174).

According to Babbie and Mouton (2001) qualitative studies will typically use qualitative methods of collecting data such as interviewing and qualitative methods of data analysis.

3.2.1. Data collection methods

Structured open-ended interviews and group discussion were chosen as the interview techniques in this study. This study was based on empirical evidence gathered by collecting data from the

farmers through structured open-ended interviews, focus group discussions and observation. The data sets were the analyzed and interpreted.

3.2.1.1. The structured open-ended interview

Structured open-ended interview was chosen in this study because it is the key component of qualitative data collection and it allows exploration of key issues in depth in a face to face encounter and have an added benefit of the personal involvement of the researcher (Pratt, 1989:85).

The structured open-ended interview is a method of collecting data in which the procedure to be followed is determined in advance. It uses a formally structured schedule of interview questions.

Berg (1998) refers to this type of interview as one that operates from the perspective that one's thoughts are intricately related to one's actions. This type of interview was used to do reader focused research with the objective of understanding how selected members of the target audience interpret the ARC pamphlets that were used to generate data for this research.

3. 2. 1. 2. Focus group discussions

Apart from data collected from structured open-ended interviews, focus group discussions were used to obtain an in-depth discussion of the topic. Focus group discussions took place after the face-to-face interview had been conducted as a way to validate the data collected during the interviews.

Krueger (1998:18) views a focus group discussion as "a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment". Focus group discussions involve a small number of participants (e.g. Six to ten). Berg (1998) points out that informal group discussion engender an atmosphere in which participants feel comfortable to express their ideas freely and to discuss their attitude and behaviours. Berg (1998) further points out that one distinction between focus group and face-to-face interview is the ability to observe interactions about a discussion topic during the focus group discussion.

Focus group discussions also add value to the research process in two ways:

i. The researcher can obtain deeper levels of meaning, make important connections and identify subtle nuances in expression and meaning (Stewart & Shamdassai, 1990: 47); and

ii. The spontaneous interaction between participants in an informal group discussion may reveal information that was not disclosed in the structured open-ended interview.

Focus group discussions use group interview procedures for evaluation. It is a method of pre-testing text usefulness. Open-ended questions are used during focus group discussions to determine people's attitudes, perceptions and opinions. Facilitators of focus group discussions are not restricted to the questions that

are prepared. They are free to explore comments and issues raised by members of the group, through follow up questions.

Questions for interviews were formulated in English and some participants could not understand, so the researcher together with the extension workers who were present helped to translate them into the local language (Sepedi) for participants to understand.

3. 2. 1. 3. Observation

Observation was selected as the third method of collecting data. This method is the most basic method for obtaining information about the world around us, and it also helps the researcher to get a clear picture of the behavioural patterns of the participants.

3.2.2. Data analysis

After collecting the data the researcher then used the method of content analysis to interpret the data collected. The individual interviews and discussions of the focus group were analyzed by summarizing and transcribing answers per question.

3.2.3. Location

The research took place in the Limpopo province, the former Northern Province in South Africa. The Ga-Matlala district was selected as the research location. The population group of Ga-Matlala consists of small-scale farmers who were selected for the purpose of the research by the ARC (Agricultural Research Council).

The ARC expressed the need for this research because the selected population group is practicing crop farming and the ARC has developed *Infotoon* brochures on crop farming with the intention of developing the farming practices of small-scale farmers.

The local agricultural extension officers as well as the ARC officials from Potchefstroom are the ones who arranged the visits with the farmers.

3.2.3.1. Sampling

According to Neuman (1997) sampling is a process of systematically selecting cases for inclusion in a research study. There are two types of sampling, namely, probability sampling and non-probability sampling. De Vos (1998) describes probability sampling as a method in which each person of a population has the same probability of being selected; and Neuman (1997) describes non-probability sampling as a sampling where the probability of including each element of the population in a sample is unknown.

The sample for this study was chosen on the purposive sampling, which is a non-probability sample consisting of selected participants who are available. Within the context of this study the researcher used non-probability sampling because only a selected number of small-scale farmers were available during the time of the research.

The ARC commissioned the research and played a decisive role in the sampling of the population who took part in the research. The

sampled population in this study was farmers who were busy with farming projects of the ARC and the Limpopo Agricultural department already in place. A random sampling of the population was considered since the population is fairly homogeneous. Forty five small-scale farmers, that is twenty six were from Tibane village and nineteen from Kordon villages participated in this study representing diversity in age, gender and literacy level.

3.2.4 Selection of brochures to be researched

Brochures are small, thin books (booklets or pamphlets) giving instructions or details of a service, like holiday brochures, advertising brochures, HIV/AIDS pamphlets, patients leaflets and Love Life pamphlets (Longman Dictionary, 2002). The ARC *Infotoon*s are a series of development pamphlets that guide rural small-scale farmers on farming practices.

As the purpose of this research was to conduct usability testing on ARC printed pamphlets on rural small-scale farmers, two pamphlets from the ARC's *Infotoons* were chosen, namely, *The cultivation of maize* and *How to grow of Bambara groundnut*.

ARC is the producer of the pamphlets for small-scale farmers to guide them in their daily practices of farming.

3.3. THE RESEARCH PROCESS

The actual research took place in two different areas of the Ga-Matlala district, namely, at Tibane and Kordon. Two groups of small-scale farmers from the two named places participated in this study because they were pilot communities of the ARC's farming projects.

Data and information were gathered during the individual interviews, focus group discussions using structured open-ended questions and observation. The selected groups of farmers evaluated two pamphlets produced by ARC for semi-literate readers, namely, *The cultivation of maize and How to grow Bambara groundnut.* The first pamphlet on the cultivation of maize was evaluated in Tibane on the 2nd October 2002 and the second pamphlet on the growing of Bambara groundnut at Kordon on the 7th February 2003.

The first group that participated in Tibane consisted of 26 participants, that is, 16 females and 10 males. The second group in Kordon consisted of 19 participants, that is, 11 females and 8 males.

The researcher was the facilitator of the individual interviews and focus group discussions in both areas. The researcher started by explaining to the participants the purpose of the visit, with the intention of getting permission to conduct the interviews; and removing the fear, if there was any and making them feel free to participate.

The first group to be interviewed was in Tibane's school hall on the 2nd October 2002 and lasted for four hours; the second group was in Kordon's tribal office on the 7th February 2003 and lasted for two hours because it was raining and the tribal office room was small and other participants were participating from the veranda and could not withstand the cold weather.

Participants were first interviewed individually on their demographic and socio-economic status using structured closed questions. After completing the demographic interviews, farmers were presented with selected ARC pamphlets to read and comprehend. There after they were again interviewed individually using structured open-ended questions. After the individual interviews participants were divided into groups to discuss the questions in groups.

3.3.1 The structured open-ended interview

The structured open-ended interview is one of the interview techniques chosen in this study. Comprehension test type questions were used to determine whether the pamphlets have disseminated the intended message to small-scale farmers. Specific questions were asked to establish how these farmers understood and interpreted the message.

Apart from the open-ended questions used to test the comprehension of participants, closed questions were also used to gather the demographic information of participants. Most open-

ended questions were focused on general evaluative comments and interpretations of the visual and verbal text of the pamphlets.

3.3.2. Focus group discussion

The focus group discussion took place after the individual interviews had been conducted as a way of validating the data collected during these interviews. The same participants who were interviewed took part in the focus group discussions. A discussion framework was used to guide the focus group discussions. The discussion often deviated from the guideline, due to other information provided by the participants. All the main points of the discussions were recorded.

3.3.3. Observation

Observation was also a technique used to collect data in this study. The researcher started observing the participants on the first day of arrival until the last day of the research. The information obtained through this technique helped the research to conclude some findings about the behaviour of the participants.

3.4 METHOD OF DATA ANALYSIS

Marshall and Rossmann (1995:111) describe data analysis as the process that brings order, structure and meaning to the mass of collected data.

The data collected during the interviews and focus group discussions was analyzed according to Berg's (1998:233) description of content analysis where participants' answers are examined question by question to determine a common theme. The responses were later transcribed and analyzed.

3.5. THE RELIABITY AND VALIDITY OF RESULTS

As the ARC commissioned the research, therefore the ARC also did the selection of the sample. The selected sample falls within the target audience of agricultural development communication. This selection of sample by ARC should therefore not influence the reliability of results when applied to the same audience in other areas of the country.

Individual interviews, focus group discussions and observations were used to collect data from participants. It was found that most of the participants were older than the researcher and some were illiterates and it was humiliating for these participants to fail to answer questions during individual interviews. Some participants even found the individual interviews torturing and could not express themselves freely. So, individual interviews could not have

been used to validate answers given. During the focus group discussions, it was also found that most of the participants were not actively interacting; only two or three in a group were dominating the discussion. Despite the shortcomings experience with the methods used to collect data, the results indicated that the pamphlets have not effectively communicated the intended message to rural small-scale farmers.

3.6. SUMMARY

In this chapter the research design and the data-collection methods were outlined. The order of the research procedure that was followed was stated. The research process undertaken in this study was also described.

The analysis of data and findings of the research are discussed in the next chapter.

CHAPTER 4: THE ANALYSIS OF DATA AND FINDINGS

4.1. INTRODUCTION

This chapter discusses the results and findings of data collected from individual interviews, focus group discussions and observations conducted at Tibane and Kordon rural communities of Ga-Matlala. The main focus of the analysis was on the demographic and socio-economic information of the two communities of Ga-Matlala and the evaluation of two ARC pamphlets, namely *The cultivation of maize* and *How to grow Bambara groundnut.* The demographic results of the two communities are presented in tables, which are further explained.

4.2. THE DEMOGRAPHIC AND SOCIO-ECONOMIC DATA OF GA-MATLALA COMMUNITY

It was important to determine the demographic and socio-economic information of the sample as this information could lead to the identification of certain habits and deviations in the sample selected.

General questions about the demographics of the participants were done as the first method in data collection. This was done in order to establish whether the demographic and socio-economic factors

could act as barriers to the effective communication of information for development

Questions about age and gender, education level, language profile, skill training, media access, the type of farming practiced was asked to determine the demographic and socio-economic information of the participants.

4.2.1. The communities' demographic analysis

The demographic data collected is summarized in the tables below.

The table below illustrates the gender and ages of participants

Table 1: Gender and age of the participants

	TIBANE		KORDON	
AGE	**MALES**	**FEMALES**	**MALES**	**FEMALES**
Less than 30 years	-	2	-	-
31-39 years	1	3	-	1
40-49 years	1	5	-	8
50-59 years	4	4	4	2
Over 60 years	4	2	4	-
TOTALS	**10**	**16**	**8**	**11**

The distribution trend of participants shows most of them ranging from 30-60 years. This age and gender distribution also shows that older farmers (between 40-65years) as active farmers than those younger than 40 years, the distribution also indicates that most of the participants are females. These gender imbalances were brought by men working and staying in cities and most women in rural areas like the ones mentioned above being housewives.

The education level of participants is analyzed in the table below.

Table 2: Education level of the participants

	TIBANE	**KORDON**
HIGHEST LEVEL OF EDUCATION	**NUMBER OF PARTICIPANTS**	**NUMBER OF PARTICIPANTS**
Primary	8	9
Middle	-	3
Secondary	6	2
Tertiary	-	1
None	12	4
TOTAL	**26**	**19**

The table above indicates that seventeen participants have attended up to primary level of education, they are considered to be functionally literate and are likely to have knowledge of written vernacular language, but they have limited capacity to spoken and written English. The table also indicates that sixteen participants have not attended any formal schooling; therefore they cannot read and write, this means that they will not be able to use the ARC pamphlets. Only fifteen participants can read and write in English because they attended up to secondary level of education.

The table below shows the number of years participants stayed in the area.

Table 3. Number of years staying in the place

	TIBANE	**KORDON**
NUMBER OF YEARS IN THE PLACE	**NUMBER OF THE PARTICIPANTS**	**NUMBER OF PARTICIPANTS**
Less than 5yrs	-	-
6-10yrs	4	4
11-20yrs	17	8
More than 20yrs	5	7
Total	**26**	**19**

The table above shows that the majority of participants have been staying in Tibane and Kordon for more than eleven years. These results indicate that these participants are permanent residents of the areas.

Table 4 below analyzes the languages profile of participants.

Table 4 Language profiles of participants

The reason for compiling the language profile of the participants is to determine their language proficiency.

	TIBANE	KORDON
LANGUAGE	**NUMBER OF PARTICIPANTS**	**NUMBER OF PARTICIPANTS**
English	3	4
Afrikaans	2	1
Northern Sotho	15	15
Other(Tsonga)	11	4

The table above indicates that the majority of participants can speak Northern Sotho (Sepedi), fifteen Tsonga, seven English and only three can speak Afrikaans.

The figures indicated in the above table show that the majority can speak Sepedi and Tsonga more than English and Afrikaans because Sepedi and Tsonga are local languages. This was evident when most of the participants could not understand questions read

in English and the researcher was forced to translate them into Sepedi.

The table below outlines the access to media of participants.

Table 5 Participants' access to media

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	TIBANE	KORDON
MEDIA	**NUMBER OF PARTICIPANTS**	**NUMBER OF PARTICIPANTS**
Radio	26	19
Television	26	19
News paper	13	17
Pamphlets	-	1

The table above shows that all participants of the two areas have access to radio and television, twenty have access to the newspaper and only one participant has had access to a pamphlet on HIV/AIDS.

These results indicate that participants were seeing the ARC pamphlets for the first time and this means that the provision of information for development to rural areas is still a problem. ARC agricultural pamphlets are not distributed properly to rural communities.

Table 6 below shows the type of farming practiced by participants.

Table 6 Types of farming practiced by participants

	TIBANE	KORDON
FARMING	**NUMBER OF PARTICIPANTS**	**NUMBER OF PARTICIPANTS**
Livestock	10	6
Crop production	26	19
Both	**16**	**6**

The table above shows that sixteen participants practice livestock farming; twenty nine-practice crop farming and twenty-two practice both livestock as well as crop farming. This is an indication that the farming in rural areas is inherent, it existed long ago. Even if they are not educated as displayed by the results in table 2, it indicates that they were able to grow and cultivate crops.

The table below shows the skills training of participants.

Table 7: Skills training

	TIBANE	KORDON
TRAINING OPPORTUNITIES	**NUMBER OF PARTICIPANTS**	**NUMBER OF PARTICIPANTS**
Workshops	5	1
Meetings	26	19

The table above shows that only five participants did attend workshops and twenty-six participants have just attended a series of meetings. This means that there was no formal training received by the participants but they were able to cultivate maize and grow Bambara groundnut on their own with the help of the knowledge inherited from their fore fathers.

4.3. SUMMARY OF DEMOGRAPHICS

The results indicate that the majority of small-scale farmers of Tibane and Kordon communities are females because traditionally they believed that women are not supposed to work in the industries, only men can. Men who are farmers are relatively old and unemployed. The socio-economic status of the areas is low because most of the participants are unemployed and depend mainly on their product sales, social grants and pensions. The turnover rate from their sales is unstable because sometimes they experience low rainfall.

The level of education of the participants in the two areas is low; this was confirmed by results indicating most participants' highest level of schooling is up to primary level and sixteen participants were totally illiterate.

It is also indicated that all participants practice livestock and crop farming, despite the fact that they did not receive any formal training, only attended workshops and meetings arranged by extension officers; this shows that they had the skills which they acquired from their fore fathers.

4.4. EVALUATION OF SELECTED PAMPHLETS

The responses of the participants to individual interviews were categorized according to the criteria determined by the sub-questions of this research regarding comprehension, attitude and attraction.

4.4.1. Comprehension

The aim of comprehension testing in this research is to determine the ability of readers to perceive and understand printed text. Before the evaluation of the two pamphlets participants were presented with pamphlets (see Appendix B) to read and comprehend. The questions for the comprehension test of the two pamphlets were categorized according how participants perceive

visuals, verbal (text), time and the extent to which they showed insight into the contents of the pamphlets.

4.4.1.1. Pamphlet 1: *The cultivation of maize*

This pamphlet was evaluated in Tibane rural community. Twenty-six participants were interviewed.

4.4.1.1.1. Visual perception

The following questions (see Appendix A) were asked to determine whether participants could identify visuals (pictures) illustrated in the pamphlet.

1. **Show me the sun.**

- All participants were able to identify the sun except for the three participants who confused the sun with the smiling face of a person.

2. **Show me the clouds and the calendar.**

- All participants managed to identify the clouds and the calendar.

3. **What is the man doing in frame 3?**

- All participants were able to identify a man digging with a fork.

4. **What is the man doing in frame 6?**

- All participants were able to identify a man making furrows with a hoe.

5. What is the woman doing in frame 7?

- Six participants managed to identify a woman sprinkling fertilizer in the furrow and twenty participants identified her sprinkling seed in the furrow.

6. What is in the tin/can?

- Six participants were able to identify the fertilizer in the tin and other participants assumer it was the seed.

7. What is the man doing in frame 8?

- All participants indicated that the man is closing the furrow with a rake.

8. How many kernels are put in one hole?

- This was an easy question every participant could identify that there are three kernels in a hole.

9. What is the cow eating in frame 17?

- All participants were able to identify a cow eating cut off remains of stalks.

4.4.1.1.1.1. Inferences

Though the participants were seeing the pamphlet for the first time, they were all able to identify all visuals illustrated in the pamphlet except for the illustration of the sun which three of the participants confused it with a smiling face of a man. A problem was encountered when participants were asked to detect what is in the tin of coke, most participants assumed it is the maize seed because the pamphlet is about the cultivation of maize and also did not identify the fertilizer 3:2:1 written on the bag, only six managed to identify the fertilizer 3:2:1 and read the supporting words on the picture.

4.4.1.1.2. Verbal (text) perception

The following questions were asked to determine the participants' understanding of verbal signs presented in the pamphlet.

1. **How far apart should furrows be made in frame 6?**

- Six participants indicated that furrows should be a meter apart and twenty said that furrows should be a fork's length apart.

2. **What does the number line represent in frame 7?**

- Six participants were able to say the number line represent fourteen meters, eight participants said it is a mathematical factor and others could not comment.

3. **What can be used for fertilizing the soil if you do not have money to by fertilizer in frame 9?**

- All participants indicated that kraal manure could be used.

4. **Read me the words "after one month" and show me the month in the calendar.**

- Most participants could not read the words and identify the month in the calendar, only six managed to read and identify the month in the calendar.

5. **What are you supposed to do on regular basis?**

- Most participants said that they should water the plants regularly because plants need water to grow; only six participants managed to read words 'regularly remove weeds' from the pamphlet.

4.4.1.1.2.1. Inferences

The results indicate that most of the participants could not read the words like 'after one month, one meter and regularly remove weeds' written in the pamphlet because they are written in English. The other reason is that the majority of participants have attended school up to primary level of schooling and some are illiterates.

4.4.1.1.3. Time

A question on time was asked to determine whether participants understand the calendar and can identify months indicated in the calendar.

1. **After how long should we pick green maize?**

- All participants were able to indicate that green maize is picked up after four months but it was only six who managed to show the month in the calendar.

4.4.1.1.3.1. Inferences

Participants know months of the year despite the fact that they cannot read and show the month in the calendar. They know when to plant and cultivate maize without reading from the pamphlet.

4.4.1.1.4. Insight

The following insight seeking questions were asked in order to determine the in depth knowledge of participants about the pamphlet.

1. **Explain what the pamphlet is all about.**

- Most participants could not explain exactly what was happening in the pamphlet, they only identify pictures illustrated in the pamphlet some gave a general view of what is happening when they usually cultivate maize. Only six participants were able to explain what was happening because they were able to identify pictures and read the words written on the picture.

2. **What does the word maize mean?**

- All participants indicated that maize means ‘lefela’ in Sepedi language.

3. **What is happening in frame 2?**

- Most participants indicated that the man is hoeing, only a few managed to say that the man is taking out weeds with a hoe.

4. **What is happening in frame 4?**

- Twenty participants said that the man is raking the soil. Six participants explained that the man is breaking the clods and evening out.

5. **What is happening in frame 5?**

- Most participants indicated that someone is buying a bag of maize meal, only eight participants managed to say that a person is buying a bag of maize seed.

6. **What is happening in frame 15?**

- All participants indicated that the person is taking the kernels off the cob.

7. What does 14m mean in frame 7?

- Most participants indicated that 14m means the distance and six explained that it means the distance to be sprinkled by one tin of fertilizer.

8. Why is the man breaking the clods and evening out in frame 4?

- All participants indicated that it is for easy planting of seed.

9. Why is man the closing furrows in frame 8?

- Most participants said that he is covering the seed because they usually cover the seed after sawing in furrows, only six participants gave the correct reason that the man is covering the fertilizer because the frame is a follow up from the one which the woman was sprinkling the fertilizer in the furrows.

10. Why are the words written below each other in frame 11?

- All participants could not give the relevant reason; three of them said it is the arrangement of fertilizer, soil and seed underneath the earth's surface.

11. Why is the calendar in frame 13 different from the one in frame 1?

- Most participants could not notice the difference because they could not read the months written on the two calendars,

Only six participants managed to notice that on the calendar in frame 1 is written November and on the one in frame 13 is written December.

12. Why is the man taking the kernels off the cobs?

- All participants indicated that it is for easy storage into the bags.

13. Explain why should we wait for maize to dry before storing in bags?

- All participants indicated that is for preventing the maize to rot.

4.4.1.1.4.1. Inferences

Most participants could not explain exactly what was happening in the frames because they could not read the words supporting the pictures; they just identified pictures shown in the pamphlet. This means that participants did not understand what was happening in the pamphlets because of the language used.

4.4.1.2. Pamphlet 2: *How to grow Bambara groundnut*

This pamphlet was evaluated at Kordon rural community. Nineteen participants were interviewed.

4.4.1.2.1. Visual perception

The following questions were asked to see if the participants can identify visual signs illustrated in the pamphlet.

1. **In which continent is Bambara groundnut grown?**

- All participants were able to say Bambara groundnut is grown in Africa.

2. **The Bambara groundnut is formed from which part of the plant?**

- All participants were able to say it is formed from the roots.

3. **What is the man doing with a rake in frame 6?**

- Most participants said that the man is breaking the clods and eight participants said he is evening out.

4. **What is the distance between the ridges and furrows in frame 7?**

- Most participants indicated that the distance should be the fork's length; only nine participants could read that it should be a meter apart.

5. **How many seeds should be planted in one hole in frame 8?**

- Most participants said four seeds should be planted in one hole and eight said that we should plant one to four seed in a hole.

6. **Identify the pictures that illustrate the watering of the Bambara groundnut**.

- All participants were able to identify frame 9.

7. **What is inside the pot?**

- All participants were able to identify Bambara groundnut inside the pot.

8. **What is happening in frame 16?**

    - All participants were able to identify a woman serving cooked Bambara groundnut.

4.4.1.2.1. Inferences

Participants were able to identify pictures illustrated in the pamphlet, despite the fact that they were seeing the pamphlet for the first time. The pictures were visible enough for the participants to see and identify.

4.4.1.2.2. Verbal perception

The following questions were asked to determine how participants perceive verbal signs presented in the pamphlet.

1. **What do people in the South call the Bambara groundnut?**

    - Most participants could not read the name Congo-bean or Njungo-bean written in the pamphlet. Only six managed to read the names from the pamphlet.

2. **Read me the words "remove the weeds regularly" from the pamphlet.**

    - Most participants could not read the words because nine of them have up attend schooling to primary level of education and four are illiterates.

3. **After how many weeks should we apply top dressing to the groundnut?**

    - Thirteen participants could not read the words "after 3 weeks" written in the pamphlet; only six could read the words.

4.4.1.2.2.1. Inferences

The responses indicate that most participants could not read the words from the pamphlet because some of them are illiterate and others have attended school only up to primary level. Detecting the month to apply top dressing most participants used their previous knowledge of the time they usually apply dressing not the one written on the pamphlet because they could not read the words on the pamphlet.

4.4.1.2.3. Time

Questions on time were asked to determine if participants can differentiate between months in the calendar and also to see if they know when to grow Bambara groundnut following the times stated in the pamphlet.

1. **What does the pamphlet say when should we plant Bambara groundnut**?

    - Twelve participants responded that it is planted in summer because they usually plant it in summer. Only four managed to read the words “start planting in midsummer”.

2. **In which month can we start planting the Bambara groundnut**?

    - Most participants could not give the exact month indicated on the calendar, only six manage to give the correct month written on the calendar.

4.4.1.2.3.1. Inferences

The responses indicate that participants know the seasons of the year; they know that Bambara groundnut is grown in summer though some cannot give the exact months indicated in the calendar.

4.4.1.2.4. Insight

The following insight seeking questions were asked to determine the in depth knowledge of the participants about the pamphlet they read.

1. **Explain what is happening in frame 2 and 3.**

- Most participants explained that the man is digging the soil in frame 2 and in frame 3 there is a hand with a white substance. Six participants explained that the man is loosening the soil in frame 2 and in frame 3 there is a hand with fertilizer.

2. **Explain what the four garden forks in frame 5 illustrate.**

- Most participants indicated that the four garden forks illustrate the size of the seed bed and six explained that they illustrate that for every one square meter one should used one hand of fertilizer or four hands of manure.

3. **Explain what the hands in circles in frame 5 illustrate.**

- Ten participants indicated that the hands in the first circle illustrate maize meal and the hands in the second circle kraal manure. Three participants said that hands in the first circle illustrate a finger and a hand with a white substance. Only six participants managed to explain that hands in two circles illustrate that for every square meter of soil, use one hand of fertilizer or four hands of kraal manure.

4. **Explain what the finger in the hole in frame 8 indicates.**

- Most participants said that the finger indicates the depth of the hole and six said it indicate 5cm.

5. **Why should we work soil up against the lower stem as in frame 12?**

- Ten participants said is for supporting the roots from erosion and nine participants said it is for stimulating pod growth.

6. **How should we harvest the Bambara groundnut?**

- Most participants said they should use a hoe to harvest the Bambara groundnut and some added that one can also use a fork as indicated in the pamphlet.

7. **What does "shell by hand" in frame 14 mean?**

- All participants explained that it means removing the shells by your hands.

4.4.1.2.4.1. Inferences

When answering questions 1, 2 and 3 most participants just gave the description of pictures without showing meaning. This indicates that most participants did not understand exactly what was illustrated in the pamphlet because of their low literacy level. Only six managed to explain what was happening in the frames indicated because they were able to read the words in English.

4.4.2. Attitude

The following questions were asked to determine how participants feel about the usability of the pamphlet. Forty-five participants were interviewed. Twenty-six were from Tibane and nineteen from

Kordon villages. The responses of the two communities are tabulated below.

QUESTIONS	**TIBANE (Maize)**	**KORDON (Bambara groundnut)**
1. Have you seen the pamphlet before?	All participants indicated that they were seeing the pamphlet for the first time.	All also indicated that it was the first time they see the pamphlet.
2. What about the pamphlet did you like?	All participants indicated that they like the pictures illustrated in the pamphlet.	All said that they like pictures displayed in the pamphlet.
3. Can you easily grasp what is happening in the pamphlet?	Twenty one indicated that they cannot grasp what is happening in pamphlet because it is written in English	Twelve participants indicated that they cannot read English and so they cannot grasp what was happening in the pamphlet.

4. Can you help others with this pamphlet?	Twenty said they are going to show other small-scale farmers, others said they can tell others what they heard about the pamphlet.	Six participants said they are going to help others, eight said they are going to give their children to use them for their school garden and others said that they are going to keep them at home.
5. Tell me about the person who wrote this pamphlet.	Ten participants said that the pamphlets are written by whites, five said is the extension officers and three said it is the Limpopo ARC.	Seventeen participants could not identify the person who wrote the pamphlet, only one managed to indicate that ARC wrote it.
6. Are you familiar with the tools presented in the pamphlet?	All participants indicated that they were familiar with all the tools illustrated in the pamphlet.	All participants indicated that they were familiar with all the tools illustrate in the pamphlet.

7. Do you usually follow the steps shown in the pamphlet?	All participants indicated that they do not follow the steps shown in the pamphlet because they were never provided with such a pamphlet before. They use their own knowledge to cultivate maize.	All participants said they do not follow the steps illustrated in the pamphlet because they grew Bambara groundnut from their own experience.
8. What will do at home with the pamphlet?	Twelve participants said that they are going to use the pamphlet as reference and thirteen said that they are going to give it to their children for school gardening.	Eight participants indicated that they are going to use it as reference and fourteen said that they are going to just keep it because it is meant for small backyard gardens not for big farms.

4.4.2.1. Inferences

The above responses indicate that all participants were seeing the pamphlets for the first time; this shows that pamphlets were not distributed properly.

Farming was long practiced in these two areas mentioned above; this was evident when all participants were familiar with all the tools illustrated in both pamphlets. When asked if they do follow steps illustrated in the pamphlets, participants indicated that they do not follow the steps but they can plant and cultivate crops on their own.

When asked what they liked, all participants indicated that they like pictures because they were visible and attractive.

4.4.3. Attractiveness

This criterion was used to determine the feeling of participants about the coding and visual signs of the ARC pamphlets. Forty-five participants were interviewed, twenty six from Tibane and nineteen from Kordon villages.

The following questions were asked to determine the attractiveness of the pamphlets.

1. Do the pictures tell you clearly what is happening in the pamphlets?
2. Can you easily read the words in the pictures?
3. Do you like the size of the pamphlets?
4. Do you prefer photographs or text in order to understand these pamphlets?

5. What do you think of the colours that are used in the pamphlets?
6. Are all pictures a representation of reality?
7. Are the wordings visible enough to read?
8. Are the pictures visible enough to see and understand?
9. Are you familiar with all the pictures presented in the Pamphlets?

QUESTIONS	**TIBANE (Maize)**	**KORDON (Bambara groundnut)**
1. Do the pictures tell you clearly what is happening in the pamphlets?	All participants said that the pictures tell clearly what is happening.	All also said that they tell clearly what was happening.
2. Can you easily read the words in the pictures?	Six said that they could read the words but the majority indicated that they cannot read at all and some said that they couldn't read words in English.	Eight said they could read the words because they can read words in English. Seven said they cannot read English and the other four said they couldn't read at all.

3. Do you like the size of the pamphlets?	All said that they like the size of the pamphlet.	All were satisfied about the size of the pamphlet.
4. Do you prefer photographs or text in order to understand these pamphlets?	All preferred photographs	All also preferred photographs
5. What do you think of the colours that are used in the pamphlets?	All said colours are attractive	All participants said that the colours were attractive.
6. Are all pictures a representation of reality?	The majority of participants said that pictures represent reality.	All said pictures represent reality.
7. Are the wordings visible enough to read?	Only six participants indicated that the wording was visible to read and others could not tell because they cannot read the words.	Eight participants were able to say wording was visible to read but others could not comment because they cannot read English and some are illiterate.

8. Are the pictures visible enough to see and understand?	All said that pictures are visible enough to see but they need someone to explain to them in order to understand.	All said that the pictures are visible enough to see and eight added that they can understand without being helped.
9. Are you familiar with all the pictures presented in the Pamphlets?	All said that they are familiar with the pictures presented; only the sun looks different from the real one.	All said yes, only the sun looks unfamiliar with man's features.

4.4.3.1. Inferences

The responses above indicate that literacy is a barrier to farmers in rural areas; this was evident when most participants could not explain what was happening in the pictures because they could not read the words supporting the pictures.

The responses also indicate that participants prefer photographs than illustrations to understand the pamphlets because most of them could not read words in English and some could not read at all. The pamphlets were found attractive to the participants because of their colourful pictures.

4.5. Focus group discussions

Apart from the questions asked during individual interviews a discussion framework was designed in order to guide the focus group discussions. This framework was designed to elicit questions about comprehension, attitude and attractiveness of the pamphlets.

The discussion framework included the following questions:

1. Tell me about things you do not understand in the pamphlet?
2. What do you think of the language used in the pamphlet?
3. How would you prefer the pamphlet to look like?
4. Tell me about the pictures in the pamphlet. Do you understand them?
5. What do you like to be changed in the pamphlet?

QUESTIONS	TIBANE (Maize)	KORDON (Bambara groundnut)
1. Tell me about things you do not understand in the pamphlet	Most participants indicated that they do not understand the arrangement of pictures because they are not numbered to indicate the relationship between them. Most participants with low literacy level indicated that they do not understand words written in the pamphlets.	Most participants indicated that they could not follow the sequence of the pictures because frames are not numbered. Most of them have up to primary level of education and some are illiterate so they indicated that they do not understand what is written in the pamphlet.
2. What do you think of the language used in the pamphlet?	Most participants said that the language used is not suitable for them because they cannot read English.	Most participants complained that they couldn't understand words written in English.
3. How would you prefer the pamphlet to look like?	Most participants indicated that they are satisfied about the size of the pamphlet, only one participant preferred one big poster rather than an A4 page in the booklet.	Most participants could not really indicated how they would like the pamphlet to look like but following their discussion one could hear that they are satisfied about the size of the pamphlet.

4. Tell me about the pictures in the pamphlet. Do you understand them?	Pictures were found easy to identify by all participants, the only problem encountered was to understand what was happening in the pamphlet by most participants because the words were written in English and most of the participants could not read English.	All participants indicated that the pictures are attractive and visible enough to can identify but it was only a few who were able to read and understand the words in English.
5. What do you like to be changed in the pamphlet?	All participants felt that the language used in the pamphlet should be changed into their local language.	It was also felt that the language used should be changed into their local language.

4.4.5.1. Inferences

The responses from the focus group discussions of the two communities indicate that the pamphlets have not disseminated the information effectively to the participants because they did not understand what was presented in the pamphlets. This was evident when most of the participant could not read and understand words written in English; and even felt that the language used should be changed to their local language. The arrangement of pictures was also a problem because they were no numbers or arrows to link them together for the low literacy participants to understand.

4.6. Observation

Through observation it was found that female farmers were most dominant among farmers selected for research in the two areas of Ga-Matlala. Most farmers are old, unemployed and they are farm owners. It was also found that most participants believe in outsiders to bring changes into their lives, this was evident when the researcher and the ARC people introduced themselves and explain the purpose of the visit. Participants indicated that they thought that the research group came to resolve their problems of poverty because it has been a long time without rain and they have no money to buy seeds and food.

It was also found that time was not observed; people arrived late during interviews of the two groups. When the researcher asked the extension workers why are people coming so late? They said that rural people believe in chieftainship and they respect their chief more than any other person.

4.7. SUMMARY

In this chapter the analysis of data on the demographic and socio-economic factors and the evaluation of the two ARC printed pamphlets were discussed. The findings about comprehension testing, attitude and the attractiveness of the pamphlets were also presented.

The conclusions and recommendations are made in the next chapter.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1. INTRODUCTION

This chapter contains the final assessment of the study's findings and provides possible solutions in the form of recommendations. In this chapter the research sub-questions are revisited and findings gathered from the study are summarized and conclusions based on these findings are made.

5.2. CONCLUSIONS

This study on the usability of printed information materials was set out to evaluate the effectiveness of the ARC's agricultural information pamphlets namely, *"The cultivation of maize and How to grow Bambara groundnut"*. The findings of the study indicated that the target audience displayed a low level of comprehension and the lack of proficiency in dealing with verbal text in English during the interviews conducted, and this led to the difficulty in understanding the message correctly.

In many developmental contexts the designers of the messages do not take the level of comprehension of the target audience into consideration when developing messages. This is emphasized by

Megwa (1996:61) when saying, “Communication should be visualized as an interactive enterprise in which both the sender and the receiver of information actively take part in the creation, transmission and reception”. The study concludes that the intended meaning as communicated by the sender (ARC) was not effectively conveyed to the receiver (small-scale farmers), looking at the element of illiteracy and other demographic and socio-economic factors.

In order to structure the discussions of the findings of this study, each sub-question is dealt with individually and conclusions are drawn.

The results of the **first sub-question** on how the target audience understands the facts presented in the pamphlets (comprehension) were greatly influenced by the low level of comprehension displayed during the individual interviews and focus group discussions. Morris and Stilwell (2003) point out that it is important to understand the factors that contributes to ensuring that message is easily read and understood, because even if the content chosen for the PAIM is appropriate to the user’s situation but the language in which it is written is complex the reader will not be able to read, understand and ultimately make use of the information. Therefore this study concludes that using English as the only language of communication to disseminate information to rural small-scale farmers is a major impediment to comprehension.

The results of the **second sub-question** on how participants feel about the usability of information provided (attitude). Though research showed that the availability of agricultural information has a positive impact on the development of rural small-scale farmers, the effectiveness of the pamphlets are mainly determined by the literacy level of the target audience, which will have an impact in the usage of the information provided by the pamphlets. Though the participants had prior knowledge on farming skills, the usability of the information provided by ARC pamphlets was ineffective. This was evident when participants could not follow the arrangement of illustrations displayed in the pamphlets and the lack of proficiency in dealing with the text.

The results of the **third sub-question** on how participants feel about the coding and visual designs (attractiveness) of the pamphlets indicated also the problem of low literacy from the coding process. Low literacy was found to be a barrier in communicating development messages in the form of print. In terms of visual design, Visual signs are much understood than the English verbal text. When using printed materials in areas with low literacy, ensure that they are tested and preferably developed with the target audience because multiple interpretations of visuals are possible especially in a heterogeneous society. For example, most participants confuse the illustration of the sun with a smiling face of a man. Again the link between the pictures needs to be considered because pictures without numbers or arrows to indicate the link between one another create confusion in understanding the

relationship between them. Though the pamphlets were attractive with bright colourful pictures, participants felt that the words supporting the pictures should be written in their local language.

The results of the **four sub-question** on whether demographics and socio-economic factors have played any role in the effective communication of the information; the results indicate the problem of low literacy which needs to be taken into considerations when designing development messages to rural disadvantaged communities. Based on the outcomes of the demographic analysis, the language used in the ARC pamphlets was not suitable for the target group because most participants were illiterate and could not read the text in English.

The last **fifth sub-question** on how the pamphlet can be improved, the study concludes that pamphlets can be improved on condition that the demographic and socio-economic position of the target audience has been taken into consideration. The findings of the study also indicate that most participants cannot read or understand words written in English and also cannot follow the arrangement of frames or pictures as presented in the pamphlets. If these pamphlets can be written in the local language of the target audience and the frames or pictures be chronologically numbered or arrows used to show the link between them the intensions to improve the pamphlets can be achieved.

5.3. RECOMMENDATIONS

For printed information to be usable and effective, producers should consider participatory approach rather than the top down communication approach. Designers of information materials should consider the demographic and socio-economic position of the target audience in order to produce messages that are relevant to the target audience.

Based on the results discussed the following recommendations can be made:

- The result on how target audience understood the contents of the pamphlets indicated that participants had difficulties in understanding the verbal signs presented in the pamphlets because of the language in which they were written and their low level of literacy. It is better to write pamphlets in the local language of the audience and to address the literacy problem; literacy development programmes should be introduced.

- In terms of how participants feel about the usability of the information provide by the pamphlets, it was found that the pamphlets were not usable and effective. For the pamphlets to be usable and effective the producers need to involve the target audience when designing the pamphlets. In this study the small-scale farmers are dependent on farming, so it is

important to involve them in any development pertaining to agriculture. It is also crucial for farmers to take responsibility of their own development because they know best their conditions of life.

- The results on how participants feel about the coding and visual designs of the pamphlets, it is recommended that the verbal signs should be designed in such a way that the reader will be able to read, understand and usefully apply the message conveyed, preferably in the local language of the target audience. With regard to visual signs it is good to use photographs to support the text and make the pamphlet attractive but it is also advisable to number the frames or use arrows to indicate the link between them.

- To overcome the demographic barriers indicated in the results of sub-question four, the illiteracy problem should be taken into consideration when designing development messages for disadvantaged communities such as Ga-Matlala. Literacy development programmes should be put in place to alleviate the problems of illiteracy.

Lastly, in order to improve the selected ARC pamphlets to meet the needs of the target audience, this study recommends collaborative action research to ensure that farmers are involved in developing their agricultural knowledge and information materials.

5.4. SUMMARY

In this chapter the conclusions based on the findings were drawn and recommendations on how to improve the pamphlets were also made.

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APPENDIX A

INTERVIEW SCHEDULE

DEMOGRAPHIC AND SOCIO-ECONOMIC FACTORS

1. How old are you?
   - Below 30 years
   - Between 30 and 39 years
   - Between 40 and 49 years
   - Between 50 and 59 years
   - Over 60 years
2. What is your highest level of education?
   - Primary
   - Middle
   - Secondary
   - Tertiary
   - None
3. For how long have you stayed at your place?
   - Less than 2 years
   - Between 4 and 10 years
   - Between 10 and 18 years
   - Between 18 and 26 years
   - More than 26 years

4. What is your literacy level?
    - Read and write
    - Read only
    - Write only
    - None
5. Which language can you speak?
    - English
    - Afrikaans
    - Northern Sotho/ Sepedi
    - Other
6. Which media do you access?
    - Radio
    - Television
    - Newspaper
    - Pamphlets
7. What type of farming do you practice?
    - Livestock
    - Crop
    - Livestock and Crop
8. Did you receive any training for farming?
    - Yes
    - No
9. What type of training did you receive?

SELECTED PAMPHLETS

THE CULTIVATION OF MAIZE

FRAME 1

1. Explain what is this pamphlet all about?

_____

_____

_____

2. What does the word MAIZE mean?

_____

3. Show me the sun?

_____

4. Show me the clouds and the calendar?

_____

FRAME 2

5. What is happening in this picture?

_____

_____

_____

FRAME 3

6. What is the man doing?

_____

_____

7. Why is he doing that?

_____

_____

FRAME 4

8. What is happening in this picture?

_____

_____

FRAME 5

8. What is happening in this picture?

_____

_____

FRAME 6

9. How far apart should the furrows be made?

_____

10. What is the man doing?

_____

_____

FRAME 7

11. What is the woman doing?

_____

_____

12. What is inside the can/tin?

_____

13. What does the number line represent?

_____

14. What does 14m means?

_____

FRAME 8

15. What is the man doing?

_____

_____

16. Why is he doing that?

_____

_____

FRAME 9

10. What can be used for fertilizing the soil if you don't have money to buy fertilizer?

_____

_____

FRAME 10

11. How far apart should fertilized furrows be?

_____

12. How many kernels are put in one hole?

_____

13. Show me how long is 50cm.

_____

FRAME 11

21. Why are these three words written below each other?

_____

_____

FRAME 12

22. Why is the calendar different from the one in frame 1?

_____

_____

23. Read me the words 'after one month' and show me the month in the pamphlet?

_____

_____

FRAME 13

24. What is happening here?

_____

_____

25. After how long should we pick up green mealies?

_____

FRAME 14

26. Why is the man taking the kernels off the cobs?

_____

_____

27. What are you supposed to do on regular basis?

_____

_____

FRAME 15

28. What is happening here?

_____

_____

FRAME 16

29. Explain why should we wait for the maize to dry before storing in the bags?

_____

_____

30. How is maize stored?

_____

_____

FRAME 17

31. What is the cow eating?

_____

32. What is the remaining cut off stalk used for?

_____

_____

FRAME 18

33. In which continent is maize a favourite?

_____

ATTITUDE QUESTIONS

1. Have you seen this pamphlet before?

_____

2. What about the pamphlet did you liked or disliked?

_____

_____

3. Can you easily grasp what is happening in this pamphlet?

_____

4. How do you think the pamphlet can help you in your work?

_____

_____

5. Can you help others with this pamphlet?

_____

6. Tell me about the person who made this pamphlet.

_____

_____

7. Are you familiar with all the tools as presented in this pamphlet?

_____

8. What are the benefits of planting maize?

_____

_____

9. What problems do you experience when growing maize?

_____

_____

10. Do you normally use the steps as shown in the pamphlet in your production of maize?

_____

11. What will you do with the pamphlet at home?

_____

_____

ATTRACTIVESS

1. Do the pictures tell you clearly what is happening in the pamphlet?

_____

_____

2. Can you easily read the words in the pictures?

_____

_____

3. Do you like the size of the pamphlet?

_____

4. Do you prefer photographs or text in order to understand this pamphlet?

_____

5. What do you think of the colours that are used in the pamphlet?

_____

_____

6. Are all the pictures a representation of reality? Motivate.

_____

_____

7. Are wordings visible enough to read?

_____

_____

8. Are pictures visible enough to see and understand?

_____

_____

9. Are you familiar with all the pictures as presented in this pamphlet?

_____

_____

10. Are the colours of all pictures and the pamphlet fit well?

_____

_____

HOW TO GROW BAMBARA GROUNDNUT

COMPREHENSION

1. In which continent is the Bambara groundnut grown?

_____

2. What does the pamphlet say you when should you plant the Bambara groundnut?

_____

_____

_____

3. The Bambara groundnut is formed from which part of the plant?

_____

4. In which month can we start planting the Bambara groundnut?

_____

5. Explain what is happening in frames 2 and 3?

_____

_____

_____

6. Explain what 4 garden forks in frame 5 illustrate.

_____

_____

7. Explain what the hands in the circles in frame 5 illustrate?

_____

_____

8. What is the man doing with a rake in frame 6

_____

_____

9. What is the distance between the ridge and furrows in frame 7?

_____

_____

10. Explain what the finger in the hole in frame 8 indicates.

_____

_____

11. How many seeds should be planted in one hole?

_____

12. After how many weeks should you apply top dressing to the groundnut?

_____

13. Identify the picture that illustrates the watering of the groundnut.

_____

14. Why should we work soil up against the lower stem as in frame 12?

_____

_____

_____

15. After how long should we harvest the Bambara groundnut?

_____

16. How should we harvest the Bambara groundnut?

_____

_____

17. Read me the words 'remove weeds regularly' from the pamphlet and explain why?

_____

18. What is inside the pot and why is it there?

_____

19. What does 'shell by hand' in frame 14 means?

_____

20. What is happening in frame 16?

_____

_____

21. What do people in the South call the Bambara groundnut?

_____

ATTITUDE QUESTIONS

1. Have you seen this pamphlet before?

_____

2. What about the pamphlet did you liked or disliked?

_____

_____

3. Can you easily grasp what is happening in this pamphlet?

_____

4. How do you think the pamphlet can help you in your work?

_____

_____

5. Can you help others with this pamphlet?

_____

6. Tell me about the person who made this pamphlet.

_____

_____

7. Are you familiar with all the tools as presented in this pamphlet?

_____

8. What are the benefits of planting bambara groundnut?

_____

_____

9. What problems do you experience when growing Bambara groundnut?

_____

_____

10. Do you normally use the steps as shown in the pamphlet in your production of Bambara groundnut?

_____

11. What will you do with the pamphlet at home?

_____

_____

ATTRACTIVESS

1. Do the pictures tell you clearly what is happening in the pamphlet?

_____

_____

2. Can you easily read the words in the pictures?

_____

_____

3. Do you like the size of the pamphlet?

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_____

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_____

_____

9. Are you familiar with all the pictures as presented in this pamphlet?

_____

_____

10. Are the colours of all pictures and the pamphlet fit well?

_____

_____

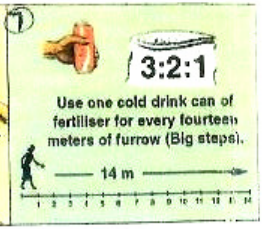
APPENDIX B

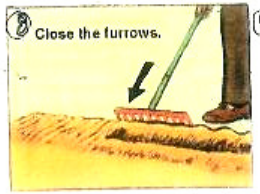
THE CULTIVATION OF MAIZE

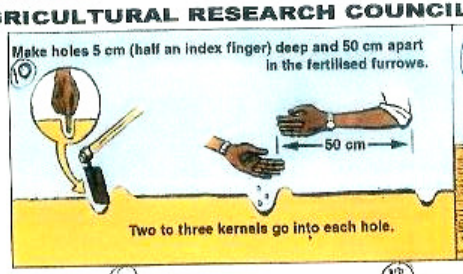
INFOTOONS

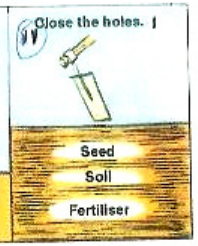
brought to you by LAND BANK and AGRICULTURAL RESEARCH COUNCIL

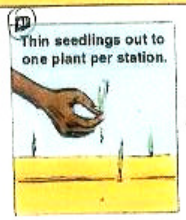
ARC • LNR

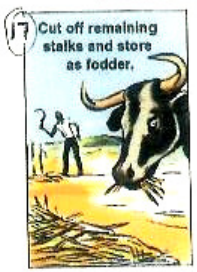


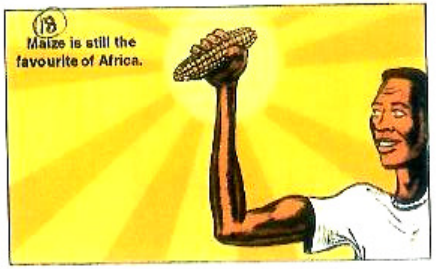












For more information on this topic, contact the ARC-Grain Crops Institute at Tel: (018) 299 610

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