

**Printed information access, preferences and use  
by farmers with potential for small-scale organic production,  
KwaZulu-Natal**

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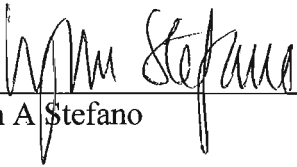
## **ABSTRACT**

Printed information access, preferences and use by small-scale farmers in KwaZulu-Natal, who are experimenting with or converting to organic farming, were investigated to establish the need for information on organic production, certification, and marketing. Forty-six resource-poor farmers from four groups at Umbumbulu, Tugela Ferry, KwaMashu and Muden participated in semi-structured group interviews. Guiding questions, information tabulation, ranking and sorting, and voting were used to gather data. Five printed agricultural information materials were evaluated.

The findings indicated that the participants trusted and relied on intermediaries for access to innovative, research-based information, and preferred interpersonal communication over other information channels. Printed materials were valued for their permanence, while participants preferred materials in isiZulu as 75% of participants were able to read and write isiZulu or were able to ask family members to read materials in isiZulu. At least one functionally literate farmer was a member of each of the participating farmer groups. Appropriate printed information on organic production, certification and marketing had not reached the participants. Characteristics of printed information materials preferred by participating farmers included: large typeface, photographs, drawings, step-by-step instructions, stories about people and events, context-specific content, the use of plain language in English or preferably isiZulu.

**DECLARATIONS**

I hereby declare that this is my own work. Where other sources have been used, these are duly acknowledged in the text.

  
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## LIST OF ACRONYMS AND ABBREVIATIONS

CTA	Technical Centre for Agricultural and Rural Cooperation
EFO	Ezemvelo Farmers Organisation
FAO	Food and Agricultural Organisation
FSG	Farmer Support Group
HDRA	Henry Doubleday Research Association
ICT	Information and communication technology
IICD	International Institute for Environment and Development
IVLA	International Visual Literacy Association
LEISA	Low External Input for Sustainable Agriculture
MRCP	Mlazi Catchment Management Programme
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental organisation
NMPLC	Newslands Mashu Permaculture Learning Centre
PAR	Participatory Action Research
PLA	Participatory Learning and Action
PRA	Participatory Rural Appraisal
SADC	Southern African Development Community
SPSS	Statistical Package for the Social Sciences
ToT	Transmission of Technology
UN	United Nations

## CHAPTER 1

### THE PROBLEM AND ITS SETTING

#### 1.1 Introduction

Traditional rural households in South Africa employ various strategies in their fight against poverty (Fraser et al. 2003). Different family members pursue "... diverse and multiple activities simultaneously, taking advantage of different opportunities and resources at different times" (Bekker 2003:14). These families (estimated at 20 million people) rely more on cash income than traditional methods of farming in order to survive (Tacoli 2002, cited by Bekker 2003). For over one third of rural households, engaging in agricultural production is the third most important livelihood tactic practiced (after remittances and wages from low-skilled jobs) (May 1998, Fraser et al. 2003). Support of agricultural production within the traditional sector (see definition in section 1.5) could have far-reaching positive impacts for food security and income generation, in spite of agricultural income (as a percentage of total income) in this sector being small (Fraser et al. 2003, Hendriks 2003).

Small-scale farmers in KwaZulu-Natal, who are among the poorest households in South Africa (May 1998, Statistics South Africa 2003), face many challenges in their efforts to increase their income and overcome food insecurity (Ortmann and Machete 2003). Erskine (1996, cited by Mukhala and Groenewald 1998) concluded that farming activities could not generate all the income most rural households needed to escape from chronic poverty. However, one possibility to generate much needed income is to convert to organic production and tap into the emerging high-value organic produce market (Kotschi 2003). If small-scale farmers are to take advantage of the opportunities that organic farming avails, such farmers require assistance, including secure access to land, financial assistance and access to input and output markets (Viljoen et al. 2002, Hendriks 2003). Relevant, accurate and up-to-date information to help farmers make informed decisions and take appropriate production and marketing action will be needed.

Small-scale farmers the world over rely on governments, non-government organisations (NGOs) and churches for agricultural support, amongst others (Harris et al. 2001, Banda 2002, Dawson 2003, Ngqangweni and Hendriks 2003). United Nations (UN) Secretary-General Kofi Annan

(Business Report International, 1 July 2003:10), in addressing a meeting of the UN Economic and Social Council, reported that 900 million people in farming communities across the world needed urgent help in sustainable farming methods to escape poverty. The New Partnership for Africa's Development (NEPAD) aims to eradicate poverty in Africa and ensure the continent's sustainable growth and development (NEPAD 2002). However, Auerbach (2003a) asserts that NEPAD's approach to sustainable agriculture is to promote genetically-engineered crops, application of chemical fertilisers and poisons. Organic farming, on the other hand, is regarded by many as an alternative, achievable and sustainable farming method for small-scale farmers (Whiteside 1998, Kotschi 2001, Madeley 2002, Auerbach 2003b and 2003c, Henry Doubleday Research Association (HDRA) 2003).

Communication and the sharing of information within the spheres of development and small-scale agriculture are well researched and documented (for examples see Aina et al. 1995, van Crowder et al. 1998, Leach 2001a, Mundy and Sultan 2001, Richardson 2003, and Technical Centre for Agricultural and Rural Cooperation (CTA) 2003). The role of printed information in development and small-scale agriculture has also received much attention, especially in respect of information provision to and access by farmers (for examples see Van Crowder et al. 1998, Mundy and Sultan 2001, and Technical Centre for Agricultural and Rural Cooperation (CTA) 2003). However, the use of information by small-scale farmers has not received much research attention (Kaniki 1989, Carter 1999).

This study aimed to evaluate how a sample of small-scale farmers in KwaZulu-Natal use printed information, with a view to establishing guidelines for the provision of printed materials for small-scale farmer conversion to organic production and certification to supply organic markets. Since information use is greatly influenced by access and preferences for information channels and design layout, these areas were also researched, using a small selection of examples of locally produced printed material.

There is growing appreciation within the development sphere of the vital role of information production and dissemination (Leach 1999), with access to information being regarded as one of the most valuable resources in agricultural development (Bembridge and Tshikolomo 1998,

Morrow et al. 2002). Van Crowder et al. (1998) emphasise that farmers' knowledge and information need to be up-graded due to the increasingly complex nature of farming, including the need to employ environmentally sound farming practices to protect the natural resource base for food production in the future. Rural resource-poor households, including those involved in small-scale farming, need contextually relevant, easily accessible and affordable information in order to reduce uncertainty about their livelihoods and aid them in making decisions that will lead to improving their situations (Aina 1995, Stavrou 2001 cited by Burton 2002). Kaniki and Mphahlele (2002:25) argue that as a result of globalisation "... problems that befall countries and people as far away as the United States of America or Singapore, may have immediate and profound effects on South Africa and its rural communities." Since emerging niche markets for organic produce are located either through export markets or are found in urban areas, far from small-scale farmers, Kaniki and Mphahlele's (2002) argument seems applicable to such small-scale farmers. These (often remote) farmers remain unaware of the opportunities and constraints that such markets offer and therefore need to be informed. Farmers need to know about the potential positive and negative impacts of entering emerging niche markets for organic produce, and can learn from the experiences of other farmers (Morrow et al. 2002) through literature, personal contact, and intermediaries, reducing risks in production and marketing.

The provision of information within development contexts takes a number of forms, including oral forms, printed literature, and since the late 1990s, information and communication technologies (ICTs) (Leach 1999, Leach 2001b, Morrow 2002, Batjes-Sinclair 2003). Oral or verbal means of sharing information are clearly favoured by rural communities in South Africa (Bembridge and Tshikolomo 1992, Leach 2001a, Viljoen et al. 2002), because of long oral traditions and relatively low levels of literacy. The growing ICT movement promotes farmers' access to information through the electronic media (Mundy and Sultan 2001, International Institute for Environment and Development (IIED) undated). However, in the case of ICTs, grassroots farmers seldom have access to technology (such as computer hardware and software), infrastructure to run such technology, and lack of literacy may prevent full access to electronic text, therefore farmers need training in the technologies to benefit from them (Morrow 2002).

Printed information on low-cost food production and farming activities, in order to increase household incomes, is a priority for small-scale farmers (Bembridge 1997), and are useful tools

for promoting sustainable agriculture and facilitating networking (Mbozi 2002). Funding agencies and non-governmental organisations (NGOs) have played an important role in providing printed information to small-scale farmers internationally and within the Southern African Development Community (SADC) region (Trench and Nyandu 1992, Bembridge 1997, Morris 2001, Mbozi 2002, Batjes-Sinclair 2003).

Repackaging of research-based information involves the “conversion of available information into a form that the end user can understand and assimilate” (Morris 2001:5)<sup>1</sup>. Despite low levels of literacy among rural people and their lack of access to appropriate materials, many regard printed materials as authoritative sources of information (Leach 2001a, Waters-Bayer 2002). While print materials are not seen as the only answer to the information needs of rural people, printed materials complement face-to-face interactions (Leach 1999).

Agricultural publications aimed at communal and small-scale livestock farmers, and small-scale farmer extension in South Africa have been reviewed by Bembridge (1997) and Morris (2001). However, farmers’ use and impact of these materials has not been determined (Bembridge 1997, Morris 2001). Kaniki (1989) recommends research on how farmers utilise available information. In addition, Carter (2000) recommends that an examination of farmers’ access to, and their priorities and design preferences for printed information is necessary.

Establishing how small-scale KwaZulu-Natal farmers experimenting with or converting to organic farming, access and use printed information, and their preferences for information channels and design layout could provide valuable guidelines for the provision of organic farming information to meet farmers’ needs. As small-scale farmers are likely to be entering a new information landscape, where their present knowledge and information sources are insufficient to meet their need for information on specialised aspects of organic production such as crop choice, agronomy, harvesting, storage, certification and markets, such guidelines could be beneficial to small-scale farmers. The application of such guidelines by information providers may lead to better access to and use of printed information by small-scale farmers, which in turn will assist them in making informed decisions about commercial organic production and marketing. Such research may be particularly helpful to those involved in the transfer of

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<sup>1</sup> The South African national and provincial Departments of Agriculture have repackaged scientific and technical information in various materials such as information packs, booklets, posters and pamphlets (Morris 2001).

information in the agricultural sector, from NGOs, government departments and universities, to agricultural facilitators, and not least of all to the farmers themselves.

## **1.2 Statement of the problem**

This study aimed to evaluate printed information access, preferences and use by participating small-scale farmers in KwaZulu-Natal, who are experimenting with and/or converting to organic farming, in order to establish the need for new information products on organic production and certification.

## **1.3 Research questions**

Use of printed information by small-scale farmers experimenting with and/or converting to organic farming is influenced by many factors within and outside of their own influence. The following research questions were arrived at:

- How do small-scale farmers access innovative, research-based information on farming in general and on organic farming specifically?
- Do small-scale farmers have a preference for the channel through which they receive information?
- What effect does literacy and language have on participating small-scale farmers' use of printed information?
- Is there adequate provision of printed information on organic farming and marketing for participating small-scale farmers?

## **1.4 Study Limits**

Research for this study was conducted with four farmer groups in KwaZulu-Natal that are supported by intermediaries, specifically the University of Natal's Discipline of Crop Science, the Farmer Support Group (FSG) and the Newslands Mashu Permaculture Learning Centre (NMPLC), and that are experimenting with or converting to organic farming. The study focussed on printed materials although other information channels were also investigated. Use of printed information by small-scale farmers refers to the usefulness of the information obtained for the user's decision-making process. For the purpose of this study, use of printed information was

investigated relative to the participating small-scale farmers' preferred information channels and design layout and what they do with information once they have accessed it. The usefulness of the information and the impact of the information on the outcome of the situation that prompted the search for information were not investigated (Hewins 1990).

Investigation with farmer groups who are not supported by intermediaries was not possible due to difficulties with identifying and accessing such groups.

### 1.5 Definition of terms

**Information** – There is no universal definition of information (Poole 1985). The term 'information' is used in many different senses, ranging from definitions that are akin to the concept of 'data' to those that use it interchangeably with 'knowledge'. For the purpose of this study, information is defined as "Ideas, facts, imaginative works of mind and data of value potentially useful in decision-making, question answering, problem solving" (Kaniki 1989:19).

**Information accessibility** – the degree to which an information channel or source of information is available for use (Poole 1985:103).

**Information channel** – the means through which a message is transferred from its source to a recipient (sensu Shannon and Weaver 1949). Channels may be one-way or two-way, the latter allowing information exchange (Morris 2001:4).

**Information relevance** – the degree to which information is related to actual or perceived needs of the users (Poole 1985:110).

**Information source(s)** - an individual, institution or media from which a message originates (Morris 2001:5).

**Master farmer** – experienced, dedicated farmer who experiments with new knowledge and technologies, and who teaches other farmers.



**Organic certification** – a system by which the conformity of products to applicable standards is determined (Callear 2003:3).

**Organic conversion** – the process by which farmers convert to exclusively using organic farming methods under a specific organic management programme. This process usually takes 36 months from the last unapproved application, but could be less if land is “organic by default” (after Callear 2003).

**Organic farming** – is based on a system of production which: requires active promotion of soil nutrition; grows crops (and livestock) appropriate for the local environment; deals with pests and diseases without chemical inputs or genetic modification; and is concerned with social, animal and environmental welfare (Callear 2003:2).

**Small-scale farmer** – The definition of a small-scale farmer has evolved over time, with two characteristics most often standing out, namely: the small size in terms of resources; and low income levels and resource base on which they operate (after Mukhula and Groenewald 1998). The definition of small-scale farmers used in this study is: Farmers working on land in the range of 0.1 - 5.0 hectares with low income, inputs, management level and technology.

**Traditional knowledge** - Experience and know-how acquired over many of years of direct human contact with the environment (after Makenzi 2002).

**Traditional sector** –African smallholder farmers, one of three institutional sectors identified in South Africa, chiefly located in the former homelands (Bekker 2003:2).

## 1.6 Assumptions

It was assumed that all participants in the workshops were interested in experimenting with and/or converting to organic farming, had access to information and used some form of printed information. This assumption was made based on input from intermediaries who work with the participating farmer groups. This study does not attempt to justify organic farming per se, but

rather investigates the use of printed information by farmers who have the potential of entering the organic industry.

### **1.7 Organisational structure of the dissertation**

The evaluation of access, preferences and use of printed information by small-scale farmers in KwaZulu-Natal is complex. Understanding what aids and constrains farmers in the use of printed information can guide information providers in the production of appropriate and relevant printed materials. A review of related literature will be presented in the next chapter to discuss findings from previous research into information access, preferences and use, as well as the provision of printed information for commercial organic farming. Chapter three outlines the survey area and the methodology used to collect data. The characteristics of the participating farmer groups are presented in Chapter four, with the results of the research process. The conclusions and recommendations for information repackaging, delivery and future research are discussed in Chapter five.

## **CHAPTER 2**

### **REVIEW OF LITERATURE**

#### **2.1 Introduction**

Information use is complex, and has “many shades of meaning and nuances” (Abbott 1989:70). Information use is defined as “... the purpose to which information is put once it has been obtained” (Poole 1985:108). Government departments, NGOs and extension agencies frequently produce printed agricultural information materials, such as brochures, leaflets, booklets and newsletters, to disseminate information to farmers (Velasco et al. 1996 cited by Morris 2001). However, agricultural materials often do not meet the information needs of farmers (Abbott 1989).

The provision of agricultural information is well documented, but there are few studies on the use of printed agricultural information (Abbott 1989) by subsistence and small-scale farmers (Kaniki 1989, Carter 1999). This literature review highlights key factors influencing the use of printed information by the rural poor within the context of development in general, and with specific reference to small-scale farmers.

A schematic representation of literature to be reviewed is presented in Figure 2.1. Thereafter a brief picture of international developments in organic farming and marketing, as well as opportunities and challenges faced by small-scale farmers converting to organic farming will be discussed.

#### **2.2 Organic farming, marketing and certification for small-scale producers in developing countries**

Local and international markets for organic produce are burgeoning, with premium prices being offered in some markets for certified organic produce (Harris et al. 2001, Dawson 2003). This emerging industry provides an opportunity for small-scale farmers in Africa to improve their livelihoods (Kotschi 2003, Kabelele 2003, Auerbach 2003d). However, organic production is not an easy solution to poverty. Small-scale farmers have to overcome many obstacles in converting to certified organic farming (Hermann and Heid 2000, Fischer 2003, Kotschi 2003,

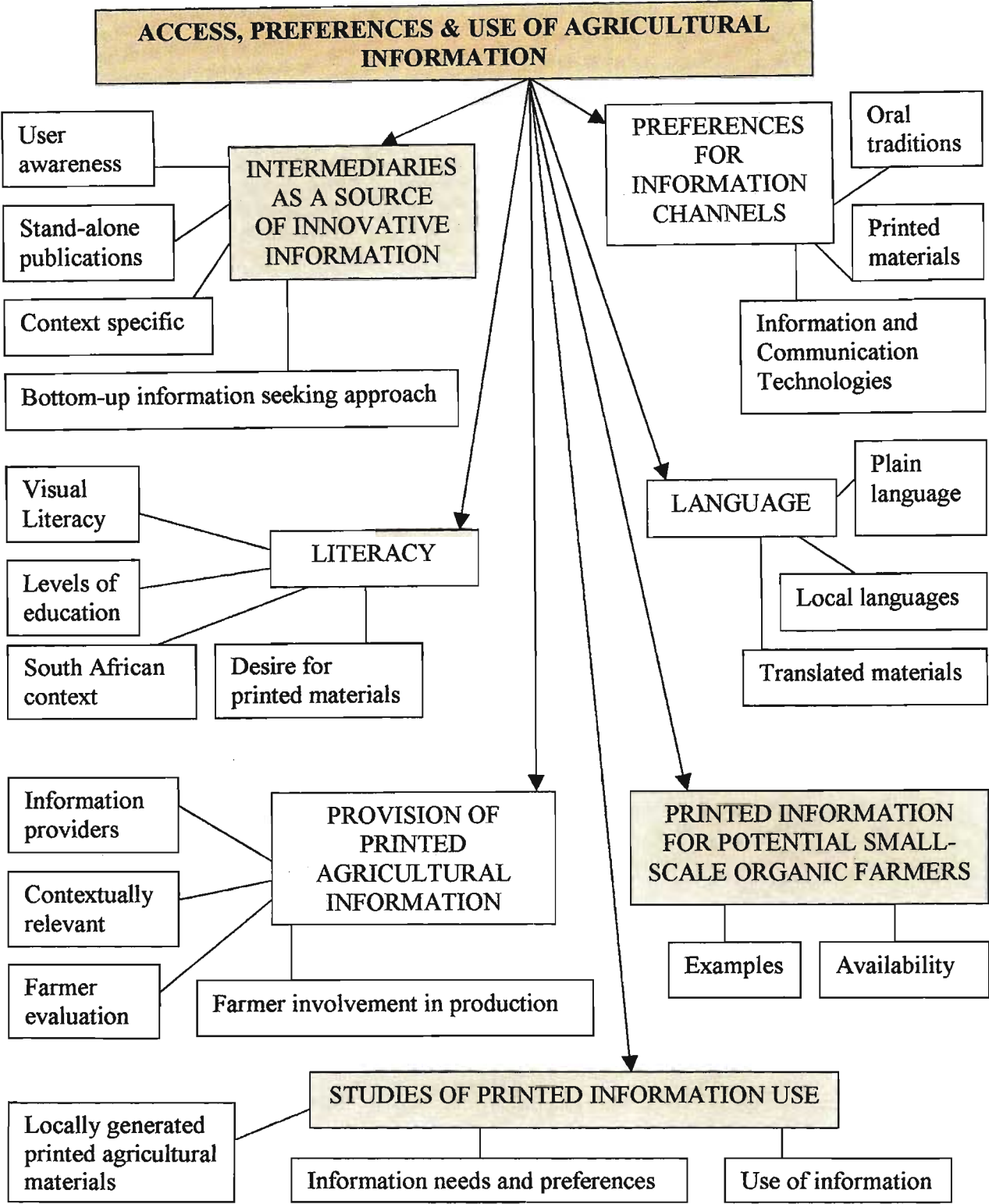


Figure 2.1: Schematic representation of literature to be reviewed

Harris et al. undated). Is it realistic for resource-poor small-scale farmers in developing countries to produce for this growing niche market?

### 2.2.1 Organic farming and markets around the world

Since 1992, an estimated 2,9 million hectares have been converted to organic farming in Europe (le Guillou and Scharpé 2000), and this trend seems likely to continue. There is considerable interest in organic produce on the part of consumers and traders throughout Europe, with supply falling short of demand (le Guillou and Scharpé 2000, Harris et al. undated). Growing consumer awareness of health and ecological issues are key forces driving the development of the international market for organic produce. Organic produce markets in the United Kingdom, Switzerland, Denmark and Sweden show annual growth rates exceeding 30% (Harris et al. 2001). In 2000, the government of the United Kingdom granted 152 authorisations for importing organic produce from developing countries, while the European Union granted accreditation to 1019 such authorisations (Harris et al. 2001).

Success stories from a number of African countries are testimony to the potential of organic farming in Africa for export (Tulip 2000, Kabelele 2003, Mwadime 2003, Quansah 2003, Van Elzakker 2003, Zimba 2003). To date approximately 500 farms, with a total area of 210 000 hectares, are under organic certification (less than 1.33% of total arable land) in South Africa (Fénye and Meyer 2003, Auerbach forthcoming).

However, during research in sub-Saharan African no examples were found of resource-poor small-scale organic farmers farming to the standards specified in developed countries. (Harris et al. undated). In a later study with a small-scale organic farmers' organisation in KwaZulu-Natal, it was found that the majority of farms were unprofitable due to high input costs and production losses (Ndokweni 2002). However, Ndokweni (2002) suggested that should these farmers increase or intensify their production, they could become economically-viable organic farmers.

2.2.2 Organic farming versus conventional farming

Proponents of organic farming in developing countries argue that this approach has many advantages over conventional farming, specifically in the areas of labour, capital, markets and skills (Auerbach 2003b). These are set out in Table 2.1.

Table 2.1 Advantages of organic over conventional farming systems in developing economies (after Auerbach 2003b:7)

	Conventional	Organic	Organic advantage
Labour	Mechanised	Labour intensive	Job creation: with the high rate of unemployment in rural areas, available labour is used
Capital	High investment	Low investment	Low entry cost: farmers do not need expensive equipment and inputs
Market	Bulk	Niche	Fair Trade buyers: organic producers receive a premium for their produce
Skills	Modern, technical	Traditional and modern	Builds on local skills: farmers' traditional methods form an important component of organic production

Given that job creation, building on local knowledge and skills, and low external inputs are all key themes within sustainable rural development, the advantages of organic over conventional farming shown in Table 2.1 are important. In addition, with the increasing activity and influence of the fair and ethical trade movements (Tallontire 2002, Friedberg 2003), small-scale farmers who link with such traders may have an advantage if they venture into the organic produce export market. The fair and ethical trade movements are discussed further in section 2.2.4.

2.2.3 Export versus local marketing of organic produce

The question of export versus local marketing of organic produce has been debated at length within the NGO sector in South Africa (Kruger 2003b). While growing European organic markets offer new opportunities to small-scale farmers (Harris et al. 2001), one issue often raised in people-centred development contexts is the increased vulnerability that such farmers face through exposure to fluctuating demand and prices characteristic of these markets (Kruger 2003b).

Export markets that provide opportunities for organic producers are an example of higher-value markets that are potentially within the reach of small producers in developing countries (Dawson 2003). For small producers to enter these markets, they need to "... innovate, diversify their products, produce in larger batches or act as subcontractors, achieve high quality standards and use attractive packaging materials" (Dawson 2003:14). However, small producers in developing countries typically supply low-value, undiversified and saturated markets, fetch low prices and face declining profit margins (Dawson 2003). If small-scale farmers are to benefit from supplying the export market, supporting agencies such as NGOs will need to play a leading role in market identification and the design and implementation of suitable project interventions (Van Elzakker and Tulip 2000, Dawson 2003).

It is estimated that 'approximately half' of the organic premium on produce imported into Europe goes to farmers, resulting in their receiving a 15-20% higher farm-gate price for their produce (Van Elzakker and Tulip 2000:569). Harris et al. (2001) found that premium prices paid to growers from the Windward Islands, Sri Lanka and East Africa ranged from 10% to 33% depending on seasonality, commodities and/or site related factors. This is a reasonable proportion of the organic premium and such prices are often higher than those that farmers in developing countries could receive on local markets (Harris et al 2001). The fair and ethical trade movements active in Europe play important roles in securing premium product prices for small-scale farmers (Udomkit and Winnet 2002). In South Africa some retailers are charging consumers premiums of up to 20% for organic produce (Ndokweni 2002). However there is no evidence that these premiums are passed on to local producers. Consumer premiums, which retailers charge consumers, are not to be confused with premiums paid to producers by retailers (Harris et al. 2001).

Harris et al. (2001) suggests that small and undeveloped local markets for organic products in the South could increase. However, for expansion to take place in the South African market, produce must be readily available and consumers need to feel confident that produce has in fact been grown organically (Harris et al 2001.) Large supermarket chains and specialised stores are increasingly providing a range of organic produce on a regular basis, clearly stamped with certification logos (Ndokweni 2002, Schreiber 2003, Kruger 2003a). Woolworths, a nationwide



retailer, provides their own packhouses for organic farmers with whom they establish contract agreements, thereby reducing transportation and infrastructure costs often carried by farmers (Ndokweni 2002). The KwaZulu-Natal Provincial Department of Economic Development and Tourism further boosts support for resource-poor small-scale farmers in the Durban Metropolitan area by funding pilot organic farming and marketing projects (Gori 2003). Their strategy is to support commercial farmers' entry to export markets and resource-poor small-scale farmers' supply to local markets (Gori 2003). These developments suggest that there may be potential for small-scale farmers to supply local markets (Harris et al. 2001).

#### 2.2.4 The role of fair and ethical trade in support of small-scale farmers

The fair and ethical trade movements are both concerned with improving the "social, environmental and economic conditions of disadvantaged producers" (Hellin and Higman 2002, Friedberg 2003). However, these two movements have distinct differences in focus. Ethical trade, which emerged during the mid 1990s, developed out of concern for corporate responsibility and socially sound sourcing by retailers (Friedberg 2003), whereas fair trade, which started in the 1960s, focuses on fair prices and better trading conditions for disadvantaged and excluded producers, raising awareness and campaigning (Udomkit and Winnett 2002, Hellin and Higman 2002). Table 1.3 provides a comparison between fair and ethical trade.

Table 2.2 Comparison of fair trade and ethical trade (after Udomkit and Winnet 2002, Tallontire 2002, and Friedberg 2003)

<b>Fair Trade</b>	<b>Ethical Trade</b>
Emphasis on <b>fair prices</b> for excluded and disadvantaged farmers in developing countries	Emphasis on <b>sound, socially responsible sourcing</b> by food retailers in developed countries
Emphasis on <b>trading terms and a margin for producers</b> to invest for sustainable business and livelihoods	<b>Codes of conduct</b> used by multinational brands or retailers
Aims to <b>change unequal relationships</b> between producers and consumers, and to empower producers	Workplace focus <b>Minimum standards</b> of employment, worker welfare and human rights need to be met
High profile of fair trade used as a <b>development</b> tool	Largely focused on the <b>welfare</b> of producers



Hellin and Higman (2002:2) list the following advantages that the fair trade label guarantees:

- a price which covers the cost of production;
- social premium for development of producers;
- partial payment in advance to avoid small producer organisations falling into debt;
- contracts that allow long-term production planning; and
- long-term trade relations that allow proper planning and sustainable production practices.

The above suggest that the advantage of fair trade partnerships to resource-poor small-scale organic producers could be substantial. Once small-scale farmers comply fully with organic regulations, and if a premium for their produce is secured through a fair trade organisation, organic farming can be profitable (Udomkit and Winnet 2002). However, complex organic regulations, known as organic certification, pose many barriers to small-scale farmers' entry into both export and local markets.

#### **2.2.5 Organic certification and conversion**

For organic produce to be marketed locally and in the European Union, Japan, and the United States of America, farmers need to obtain internationally accepted certification that verifies compliance with strict international standards (Harris et al 2001, Callear 2003). Standards, or minimum requirements, cover public (government) regulations, private (certifier) standards, industry (buyer) standards, voluntary standards, and production and processing standards coupled with certification criteria (Van Elzakker 2003). As these standards apply to both large- and small-scale farmers and producers, small-scale farmers need to develop their own guidelines that comply with these extensive regulations and are simultaneously appropriate to their specific situations (Van Elzakker 2003).

To become a certified organic farmer, a stringent conversion process, with regular inspections and extensive record-keeping is required in addition to adherence to the aforementioned farming standards. Certification is costly and resource-poor small-scale farmers are encouraged to form producer groups or co-operatives to reduce the financial demands of converting to and retaining organic certification (Harris et al. 2001). However, in spite of the many barriers to organic

certification, Harris et al. (2001) argue that organic farming could be a profitable and worthwhile option for small-scale farmer groups.

Taking into consideration the complex procedures and compliance involved in organic production, including farming practices, certification requirements, and local and export market opportunities and constraints, it is clear that small-scale farmers need accurate and reliable information to guide them if they are to succeed growing organic products commercially (Harris et al. 2001, Van Elzakker 2003, and Wettasinha 2003). The lack of appropriate information specifically for small-scale organic farmers in developing countries is a major stumbling block to their ability to make strategic choices and decisions in respect of organic conversion (Kabele 2003, Harris et al. undated).

### **2.3 Information access, use and non-use, and Poole's propositions**

Information is designed to explain and meet some of the challenges that individuals or groups face at a particular time and place (Mchombu, undated). While access to information is a necessary first step to its use, unless information is applied to specific situations it is not "profitable" or "useful" (Kaniki 2002:26). Information use is defined as "... the purpose to which information is put once it has been obtained" (Poole 1985:108). Various propositions are put forward by Poole (1985) in order to gain greater insight into the complex field of information use (Abbott 1989). Included in these propositions are factors that influence information use and information channel use such as accessibility, credibility, noise, user awareness and need. Table 2.3 shows the interrelationship of various factors of information use and information channel use. As can be seen from Table 2.3 the use of information is dependent on any one of a number of factors.

Despite the volume of printed agricultural information materials available in South Africa, only a small proportion of the 1.25 million small-scale farmers in South Africa access written information on agriculture (Bembridge 1997, Morris 2001). Often, producers of agricultural literature fail to meet the true information needs of small-scale farmers (Abbott 1989), making assumptions about what information farmers need and lacking understanding of how farmers' use information (Abbott 1989, Bembridge 1997).

Table 2.3: Summary of selected information use propositions (after Poole 1985).

Proposition		Explanation
Information use is a function of	need	Use of information is dependent on need
	user awareness	For information to be put to some purpose a user needs to be aware of the existence of that information
Information channel use is a function of	accessibility	A direct relationship exists between the actual use of a channel and the convenience with which it can be used
	credibility	People use channels which they trust
	need	Use is based on need in order to reduce uncertainty
	user awareness	As knowledge of certain channels and their abilities increases, so too does their use
	channel noise	Avoidance of the use of a channel if it contains information encoded in a language foreign to users

User information needs may also not be met due to information being physically and/or intellectually inaccessible, and not context-specific (Harris 1984, Wishart 1995 cited by Leach 2001a). Non-use of information may also be the result of personal conditions, such as the reader’s lack of motivation, ignorance as to what is available, lack of effort to find what is available, or lack of competence in the use of the literature (Harris 1984). The following sections review relevant literature to address the above issues, nl. the need for repackaging of agricultural information, awareness of information resources and the role of intermediaries.

#### 2.4 Intermediaries as a source of and/or channel for innovative, research-based information

Burton (2002) argues that most people in underdeveloped communities do not know what information they lack. In addition, people are either not aware that they need information, or that information is available and can be used to solve their problems (Harris 1984, Mchombu undated). Information, being inert, does not have the means to disperse itself (Uphoff et al. 1998). These facts emphasise the need for information intermediaries such as development workers and

extensionists to stimulate awareness of information sources among potential users of information in rural areas (Bembridge and Tshikolomo 1992).

Development workers and extension personnel (government, NGOs and commercial industry) have a responsibility to inform and assist farmers with decision-making, therefore they have an important role to play in linking farmers with research-based information (Bembridge 1997, Van Rooyen et al. 2001). These intermediaries disseminate information in various ways, for example through farm visits, demonstrations, training programmes, workshops, and by supplying printed information materials. Types of printed information produced for small-scale farmers include stand-alone or independent publications (produced for farmers in general) and context-specific publications (produced for farmers based on local conditions, resources and needs) (Morris 2001).

Information for small-scale farmers, epitomised by stand-alone publications (Bembridge and Tshikolomo 1998), has generally been of a top-down nature, characteristic of what is referred to as 'first generation' extension (Greenberg 1999). These publications are typically produced by the scientist (knowledge generator) to inform and educate the (ignorant) farmer (knowledge receiver). This is the essence of the Transmission of Technology (ToT) extension model that epitomises Shannon's (1949) outdated transmission of information model of communication. The research-based content of such publications is most often aimed not at the farmers themselves, but rather at advisors and development facilitators who have the task of passing on the information to farmers (Abbott 1989). It is suggested that much stand-alone printed material produced has been ineffective (Kotze and Kotze 1996 cited in Mukhala and Groenewald 1998, Bembridge 1997). Since participatory approaches to development emphasise the general of knowledge not only by scientists and researchers, but also by those researched, this top-down approach to information provision is increasingly questioned in the development arena (Mukhala and Groenewald 1998).

'Second generation' extension, in contrast, depends on farmers to set their own priorities which leads them to a search for information based on needs they have identified themselves (Donahew and Springer 1980 cited by Abbott 1989, Greenberg 1999). Researchers and farmers then work

together to address these needs. This pro-active, bottom-up information-seeking approach is preferable to top-down information provision. However, Greenberg (1999) argues in a similar way to Harris (1984), Mchumbu (undated) and Burton (2002), that farmers may not have identified important issues that could affect them, and therefore regards this approach as problematic.

A third way, in which farmers use both endogenous (originating within their community) and exogenous (originating outside of their community) information, is suggested from research into the sources and types of information accessed by grassroots farmers in Uganda and Ghana (Carter 1999). Greenberg (1999) recommends that farmers be introduced to new technologies that then form part of a pool of options from which farmers choose. In this way innovations are not imposed on farmers, but rather are available for selection based on the farmers' own priorities and knowledge of local conditions. A further example of two-way information flow is of an experimental information provision service in the Badeku village near Ibadan, Nigeria, where most people could not read or write (Aboyade 1984). The purpose of the project was to gain insight into the expressed information needs of the people as perceived by themselves, and to expose to them other areas of information requirements they themselves were not aware of. Awareness was raised among rural villagers of their local knowledge and the availability of information from institutions and organisations such as government departments, international and local NGOs, and universities. Such marrying of traditional/indigenous knowledge with outside information may result in keener awareness of the value and potential of their own knowledge and resources and how these can be used to their own greater benefit.

In summary, small-scale farmers rely on intermediaries to provide new farming information, after consulting family, neighbours and other farmers. However there is growing recognition of the importance of combining local knowledge with research-based information to meet farmers' needs. In addition to the role of intermediaries, farmers' preferences for information channels also have an impact on their use of information.



## 2.5 Farmers' preferences for information channels

The dissemination of information within rural contexts takes numerous forms, ranging from personal contact and printed information materials to information and communication technologies (ICTs) (Bembridge and Tshikolomo 1992, Leach 2001, Mchombu 2001). Table 2.4 depicts the characteristics of various types of communication channels used by rural dwellers.

Table 2.4 Characteristics of various channels of communication used in rural development contexts (after Food and Agricultural Organisation 1989, Leach 2001, Mundy and Sultan 2001).

Channel	Characteristics
<b>Interpersonal</b> (Oral: one on one, key individuals, groups, role play, drama/theatre, puppet theatre).	Immediate; potential for rich exchange of information; interactive; requires no technology; role-play can facilitate participation. Lacks permanence; can be time consuming; limited to those within hearing distance.
<b>Printed materials</b> Pamphlets, leaflets, booklets, books, newsletters, reports, newspapers.	Permanent record; can be referred back to; reinforces verbal messages; regarded as authoritative; carries a range of information; and can be shared with others.  Production, printing and distribution can be costly; drawings can be misinterpreted; and materials may not reach the target audience.
<b>Graphics</b> (Photographs, drawings, charts, posters).	Graphics can be useful for non-literate adults; alternative method for non-literates to assimilate information; serves as a focus for discussions; and useful as a record. A picture can be recalled later.
<b>Information and Communication Technologies (ICTs)</b> Audio: (radio, audio cassette, audio visual, video, television).	Radio is a broad medium which reaches many. Radio doesn't show what is spoken about; may not instil confidence in listeners; and provides no feedback facility.  Audio cassettes provide environments that do not require sophisticated technology. Do not provide answers to listeners' questions arising from information provided.  ICTs are problematic due to technological reasons; lack of electricity and infrastructure e.g. telephone lines, inhibits use in many rural areas; lack of equipment; and media can overshadow the message.
Computers and telecommunications (Internet, email, compact discs, word processing programmes, etc.)	Computers and telecommunications can improve the speed of communication and can provide greater scope in accessing information. Computers and telecommunications need basic infrastructure; are expensive to set up and maintain; presentation in local languages is rare; difficult to find useful sites; and typing skills and knowledge of computer screen navigation are needed.

As can be seen from Table 2.4, each channel has unique features that make the channel attractive but may have limited application in rural contexts. Community groups in rural areas in Africa

often prefer oral or verbal means of information sharing, particularly as it allows two-way communication and interpersonal interaction to take place (Carter 1999, Leach 2001b). However, this is not a universal view in developing countries. For example, women who participate in literacy circles in Uganda and Bangladesh disagree with development workers and academics who believe that “sitting around talking” is naturally participatory and spontaneous (Jellema 1998). These women find that power and domination are more prevalent through informal channels of face-to-face oral communication than, for instance, through writing and texts (Jellema 1998). Verbal communication can be especially helpful when explanations are required. However, once spoken, oral messages often cannot be recalled or revisited with the same degree of accuracy as with written texts or other recorded images (Meyer 2002). Verbal exchanges are also limited to those within hearing distance, limiting distribution of such messages (Meyer 2002).

The common assumption that rural farmers are non-literate and need oral presentation of new ideas is contradicted by Carter’s (1999) research, that found that printed materials played an important role in exposing farmers to new information. While not the only answer to the information needs of farmers (Leach 1999), farmers value printed materials, and there are numerous examples of farmers keeping printed materials for many years for reference (Carter 1999, Waters-Bayers 2002, Mbozi 2002) as print provides a permanent record and an important aid to memory (Leach 2001a).

For many farming communities in the South, modern ICTs are seen by some as a technology of the future (Mundy and Sultan 2001, Waters-Bayer 2002). The extensive knowledge and information available via electronic media (e.g. the internet and CD ROMs) are unlikely to meet the information needs of farmers – even when improved access has been secured – due to a number of constraints (Carter 1999), including the use of unsuitable language and inappropriate design.

Waters-Bayer (2002:36) implores donors and information and networking services that are promoting ICTs in rural contexts: “In your enthusiasm to explore new paths in electronic communication, don’t forget that a large number of people who are hungry for information still depend on the printed and spoken word. Please don’t starve them” (Waters-Bayer 2002:36).

## 2.6 The effect of literacy on the use of printed information

Illiteracy is seen as both a cause and effect of poverty, since people who cannot access official information are excluded from significant participation in an increasingly global world (Archer 1998, Jellema 1998). The use of printed information materials is “inextricably bound with literacy skills” (Leach 2001a:175). However, traditional definitions of literacy that focus on “reading, writing and arithmetic” are no longer sufficient to understand the complex set of communicative practices, known broadly as literacy, and described more accurately by Aitchison et al. (2000:15):

“Literacy definitions cover a wide continuum ranging from basic alphabetisation through alphabetisation plus varying degrees of proficiency in workplace languages and basic life skills needed for effective functioning in society, to literacy as a complex set of skills and behaviours embedded within the political, economic and social relations of a particular society.”

All people have complex knowledge gained through experience, and the ability to participate meaningfully within their immediate societies. However, this may not be sufficient to engage as active citizens in the wider society, where the dominant literacy is different from literacy within local contexts (Archer 1998, Zubair 2001). ‘Functional literacy’ is defined as the skills and knowledge to function competently at the lowest level of mechanical performance in a print-dominated society (Archer 1998), and the ability to function in the language in which business is conducted (May 1995 cited by Hendriks 1996). It is therefore fair to question whether small-scale farmers gain real benefits from printed materials, given that they often have low levels of functional literacy in spite of having attended school. In the next section literacy as determined by level of education completed is discussed.

### 2.6.1 Literacy and levels of education

The ability to participate in modern society depends to some degree on educational levels (Lund 1998). However, there are discrepancies in the standards used for measuring literacy levels in South Africa. Typically, literacy has been measured as the number of years of completed



schooling, but estimates of the minimum level required to attain basic literacy range from 4 to 8 years of completed schooling (Hendriks 1996).

Assuming seven years of schooling as an indicator of functional literacy, there were approximately 7.4 million functionally illiterate adults (28 percent of all adults) in South Africa in 1996 (Aitchison 1999). The percentages of the population aged 20 and above who had no schooling, some primary schooling and completed primary school, according to the South African Census of 2001 (Statistics South Africa 2003) are shown in Table 2.5.

Table 2.5 Levels of schooling of the population of KwaZulu-Natal aged 20 and older by percentage (Statistics South Africa 2003).

Level of Schooling	KwaZulu-Natal (%)
no schooling	21,9
some primary school (Grade 1 to 7/Standard 5)	16,9
completed primary school (Grade 7/Standard 5)	5,7
some secondary (Grade 8 – Grade 12)	28,8
Grade 12/Standard 10	19,8
higher education	6,9

Resource-poor small-scale farmers typically have little or no formal education, and it is estimated that between 50 and 60 percent of these farmers are illiterate (Bembridge and Tshikolomo 1992, Bembridge 1997). Therefore, printed information may be an ineffective means of communication for commonly illiterate farmers. However, this view is contradicted by Carter (2000), who found that the desire for printed information among farmers in Ghana and Uganda was high despite their generally low literacy levels. Even where one literate member or sympathetic non-member of a group shared printed information with a whole group, this was sufficient for useful information and exogenous ideas to be gained and shared (Carter 1999). Similarly the “Farmer-to-Farmer” approach promotes a “multiplier effect” (Kruger undated:28) through the horizontal diffusion of information from a literate farmer who has access to

information and new technology to illiterate or semi-literate farmers. This sharing of information usually takes place through demonstration, based on farmers' direct experimentation and the use of their own fields as living examples of the innovations they implement (Kruger undated:28).

Jellema (1998) and Land (2002) suggest that illiterate and semi-literate people place a high level of importance on print and paper, and are empowered as they persevere in their efforts to read. Women in Bangladesh and Uganda regard access to external knowledge, ie that represented by printed materials often in English, as a means way of gaining authority and legitimacy within their communities (Jellema 1998). Having a publication produced for a specific group of people affirms them, both to themselves and in the eyes of the society at large (Carter 2000, Land 2002).

### 2.6.2 Visual literacy

In addition to literacy relating to the level of education completed, visual literacy also comes into play when considering the ability of rural people to use printed materials. Visual literacy can be defined as "the ability to understand and produce visual messages" (Arizona State University 2002 cited by International Visual Literacy Association (IVLA) undated). A more detailed definition of visual literacy states:

"Visual literacy is a group of vision competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences" (IVLA undated).

A visually literate person is "able to discriminate and interpret the visible actions, objects, and/or symbols, natural or man-made, that he encounters in his environment" (Miller 1985:937). Vision competencies include, among others, the ability to:

- see differences between light and dark, brightness, colours, shapes;
- see distance, height and depth, and movement;
- understand simple body language; and
- recognise whole shapes when parts are covered or hidden (after Johnson 1978).

Bembridge (1997) suggests that using pictures alone for illiterate farmers can be successful, but this approach works best with a verbal communication approach. Supplementing the spoken word with pictures can be beneficial for semi-literate people (Hoffman 2000) as messages can be conveyed more clearly and comprehensibly. Decorative pictures are of far less value than

instructional pictures, and series of pictures, arranged to tell a story in logical sequence, have been found to be more effective than a single, short and simple message (Hoffman 2000).

Information providers can overestimate the potential of pictorial materials (Hoffman 2000). The environment and culture within which people live, their level of education and past exposure to two dimensional images (which depict three-dimensional concepts) affect how they interpret pictures and drawings (Aboyade 1984, Basel 1995). Bembridge and Tshikolomo (1998) recommend that media graphics design needs to be context-specific if farmers are to make best use of printed materials. In addition, images need to be pre-tested with the target group. Even then Hoffman (2000) warns that not all comprehension barriers will be overcome and some potential remains for alternative (mis)interpretation.

## **2.7 Language preferences of small-scale farmers in printed materials**

Literacy is not the only issue affecting farmers' use of printed materials; the language used in printed materials is often a barrier to farmers accessing the information contained in publications aimed at meeting their information needs. Rural people in Africa have been forced through schools and adult education programmes to learn foreign languages such as English or French (Mundy and Sultan 2001). This places a double burden, and emphasises the need for the availability of printed materials in local languages (Mundy and Sultan 2001). Carter (1999) found that secondary repackaging, where local farmers reproduced printed information in their own vernacular, overcame language barriers. Few locally produced printed agricultural information materials are available in the common (let alone minority) languages of South Africa (Morris 2001) even though the home language of 23.8% of the population is isiZulu, while 8.1% is English (Statistics South Africa 2003).

An innovative divergence from this norm is a publication on managing small-scale poultry in rural areas in South Africa (Farrell 2000). This publication simultaneously presents information in English, Afrikaans, Sotho, Xhosa, isiZulu and Tshivenda. Each section contains illustrations to further depict the written information (See Figure 2.2).

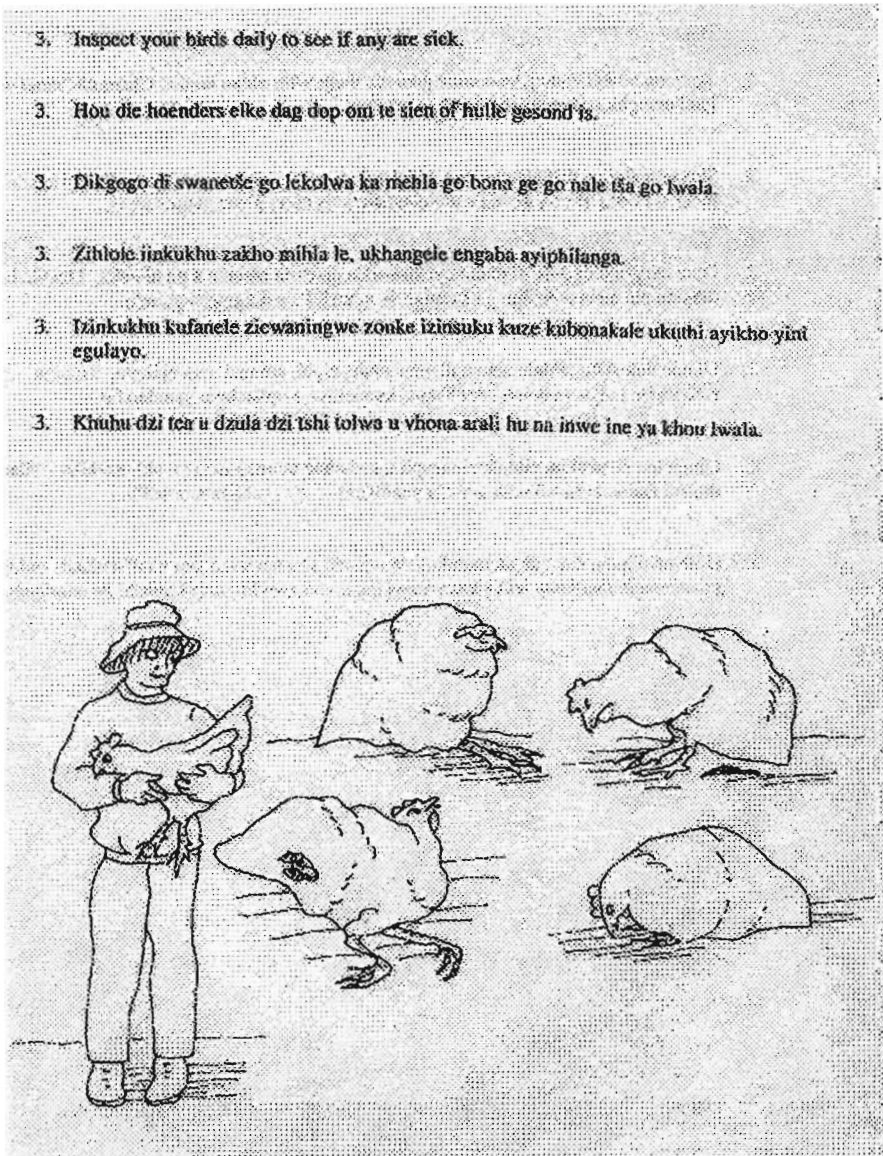


Figure 2.2 A page spread from the poultry publication written in six South African languages (Farrell 2000 p. 50).

Producers of printed information materials do not always appreciate the need for the use of straightforward and plain language, often resulting in information being available but inaccessible, i.e. difficult to comprehend because of the high level of language and technical content (Carter 1999, Mchombu undated). This is particularly true of new information made available through research institutes and universities (Trench and Nyandu 1992). Morris (2001)

recommends that scientific and technical agricultural information needs to be repackaged, ie consolidated, rewritten and appropriately presented, to make it more accessible to target audiences. These considerations need to be taken into account by information providers, such as NGOs and government departments, when producing and repackaging research-based printed information for small-scale farmers. Information providers also need to have a thorough understanding of the characteristics of their target audience when repacking research-based materials.

## **2.8 The provision of printed agricultural information materials**

Funding agencies and non-governmental organisations (NGOs) have played an important role in the provision of printed information to subsistence and small-scale farmers internationally and within the SADC region (Trench and Nyandu 1992, Mbozi 2002, Batjes-Sinclair 2003). Since 1994, the South African government, through National and Provincial Departments of Agriculture, has repackaged scientific and technical information in various materials such as information packs (National Department of Agriculture 1998), booklets, posters and pamphlets (Morris 2001). These materials are distributed to small-scale farmers and community gardeners through various Department projects. However, the quality of printed information materials for farmers in South Africa was found to be variable (Bembridge 1997) and their distribution ad hoc (Morris 2001). Bembridge (1997) also concluded that printed materials produced for disadvantaged small-scale farmers in South Africa have had limited impact. Bembridge (1997) questioned whether these farmers had gained economic benefits from these printed materials.

As mentioned in section 2.5, context-specific information is found to be of greater value to farmers than stand-alone publications (Bembridge 1997). Information should be relevant for local agro-ecological conditions, weather and topography, as well as local cultural and economic aspects of production, marketing and processing (FAO 1989). Therefore, having the intended audience evaluate the relevance of printed agricultural materials is important, as farmers are in the best position to determine whether an information product meets their needs (Morris and Stilwell 2003). In an attempt to produce relevant information that farmers can use, an assessment and identification of their information needs and community profiling is recommended (Kaniki 2001).

Small-scale farmers' access to printed information will be greatly enhanced if these farmers are included in the production of materials based on their own experience, and incorporate their local knowledge into information materials (Carter 1999, Morris and Stillwell 2003). Bembridge and Tshikolomo (1998) recommend that local communities need to be involved in meeting their own information needs. Participating in the production of local materials has numerous benefits, including adding to the motivation of those who use the materials; information is context-specific; and the process of producing the materials leads to further learning.

## **2.9 Printed information for potential small-scale organic farmers**

Small-scale farmers, wishing to convert to organic farming, face numerous challenges such as rigorous production standards, certification costs and procedures, and inaccessible markets. Why do farmers need printed information on organic farming and marketing? First, while many traditional farming methods in developing countries are chemical-free (Modi 2003, Auerbach 2003c), farmers cannot rely only on what they know from their past experience – their common knowledge - to gain organic certification. Organic farming combines the best of traditional farming methods with modern scientific knowledge (HDRA 1998), and this knowledge has to be acquired. Karlsson 1995 (cited by Morris 2001:64) suggests that rural people's "... indigenous (common) knowledge can be powerfully fused with exogenous (scientific) information to produce synergistic knowledge". Such synergistic knowledge can be recorded and presented in printed materials (Morris and Stilwell 2003:73). Second, organic food markets require farmers to meet strict national and international standards through internal quality control systems and certification (Le Guillou and Scharpé 2001, Eyhorn et al. 2002, Callear 2003). These systems need to be clearly set out and monitored. Finally, reliable market information for this niche sector is crucial to success and difficult to obtain (Ndokweni 2002).

Harris et al. (2001 and undated) found that by far the most widely cited reason for not adopting organic farming techniques was a lack of knowledge. More specifically, this included a lack of:

- awareness of the existence of organic methods;
- training and detailed instruction on application methods and rates; and
- examples of success (Harris et al. undated:10).

While rural people often prefer oral or verbal means of information sharing, as previously discussed, high-quality printed information and training materials for farmers in developing countries, which meet farmers information needs, could assist farmers to make informed decisions about converting to organic production. This is important not only because of the potential economic benefit to these farmers, but also because organic methods help to conserve natural resources and secure adequate food supply (Eyhorn et al. 2002).

Few suitable training materials on organic farming are available to subsistence and small-scale farmers in the South, and the materials that do exist are difficult to obtain (Eyhorn et al. 2002). International publications on organic farming are mostly in English, with Spanish and French translations in some instances (HDRA 1998, Eyhorn et al. 2002). A number of South African publications that include information on ecological land practices and organic production methods are available (Table 2.6). However, no comprehensive, up-to-date publication dedicated to organic farming, certification and marketing is currently available for small-scale farmers in South Africa.

Table 2.6 shows that of the 10 publications listed, one is a book, one a step-by-step manual, two are newspapers, three are magazines, and three are newsletters. It is also evident that some of the publications target small-scale farmers, where other publications are produced for rural dwellers in general.



Table 2.6      Examples of publications produced in South Africa containing information on organic methods.

Publication	Publisher	Type of publication	Target Audience	Scope of information
AgriNews	Department of Agriculture Information Services	Monthly Magazine	Agricultural sector	News from: Ministry; Provincial and Interdepartmental; Farming and Industry; and International and Sectors.
Agri-Outreach	Programme for Agricultural Information Services (PRAIS)	Bi-monthly newsletter	Subsistence and small-scale farmers	Crops; and Livestock.
Ezolimo News NeZemvelo	Department of Agriculture and Environmental Affairs, KwaZulu-Natal	Quarterly newsletter	Farmers in KwaZulu-Natal	projects; campaigns; innovations; visits; and events involving farmers.
Farmers' Weekly	Caxton/RP Magazines	Weekly magazine	Commercial farmers	agriculture; gardening; motoring; food; finance; and tips on organic gardening.
Impilo!	Media and Training Centre for Health	Quarterly magazine	Local communities	AIDS; health; homestead gardens; and poisons.
Infotoons	Agricultural Research Council (ARC) and The Landbank	A3 Step-by-step guide to small-scale farming	Rural farmers	finance; crops; natural resource management; animals; and chemical use.
Learn with Echo	The Witness	Weekly insert in The Witness newspaper	New literate readers	occasional farming/nutrition advice.
Nufarmer & African Entrepreneur	NUFARMER cc	Monthly newspaper	Emerging and small-scale farmers	livestock; homestead gardens; equipment; crops; diseases; and chemicals.
People's Farming Workbook	Environmental and Development Agency Trust (EDAT)	Book	Rural communities	agriculture; livestock and poultry; building; community development; health; and useful links.
Vikela	Farmer Support Group (FSG)	Irregular newsletter	Subsistence and small-scale farmers; extension officers; researchers	crops; organic farming and traditional crops; livestock and poultry; community development; participatory development; and natural resource management.

2.10      Studies of printed information use

In an attempt to ascertain the use that farmers in general make of agricultural literature, Abbott (1989) found that the meaning of the word “use” lacked clarity and definition, and that the terminology was ill-defined. This led to a study into the meaning of the phrase “use of literature” with particular reference to agricultural information (Abbott 1989). Kaniki’s (1989) research



into two-way information flow between farmers and information providers focused more on establishing their information needs and preferences, rather than on how information was put to use by these farmers. Questionnaire and interview surveys were administered to 1000 peasant/traditional farmers (a person who works cropped land of under five hectares) and small-scale emergent farmers (a person who farms between five and 20 hectares) in Zambia (Kaniki 1989). A questionnaire and interview protocol were developed. The questionnaire was pre-tested by 21 researchers. The data was analysed using the Statistical Package for the Social Sciences (SPSS). One recommendation coming out of Kaniki's (1989) study was that research should be carried out into how information is used by subsistence and small-scale farmers.

Bembridge and Tshikolomo (1992) conducted a pilot study of decision-making and communication patterns of small-scale farmers and householders and investigated the linkage between inter-personal sources of information used by these farmers and research-based information sources. The study was conducted during 1990/1 with 170 sample households from the Tshitumbe village in Venda. The results of the study showed that because of the high degree of illiteracy, printed media "... hardly featured as a source of information in the decision-making process" of these farmers (Bembridge and Tshikolomo 1992 p. 80). However, opinion leaders (ie those who occupy an intermediate role in communication, tended to be in younger age groups than their 'followers', and were more literate and educated) made greater reference to printed media than did their 'followers'. However these opinion leaders made little use of research-based information, and relied on their own local knowledge. Bembridge and Tshikolomo (1992) concluded that although printed mass media were not ranked as very credible sources of information by communities, printed media designed for specific programmes in simple local language might still play an important role in reinforcing inter-personal communication between individuals and groups. The authors recommended replicating the study in other areas of South Africa.

Viljoen et al. (2002) compiled a profile of traditional small-scale farmers in several rural areas of the Western Cape Province, in an attempt to describe their information environment. Data from recent surveys and studies conducted in the area were used and focus groups were used to collect data. The findings showed that land ownership and availability of financial assistance were

primary needs of the sample farmers, while information was not identified as a high priority for the sample farmers. The study found that fellow farmers and agricultural extension officers were the most important personal information channels used, with radio and printed media being the major mass-media channels for information access by these people.

Carter (1999) carried out comprehensive research into locally generated printed agriculture materials in Uganda and Ghana. The study investigated the sources and types of printed information used by farmer groups in the two countries and involved three phases of enquiry: a postal survey, in-depth qualitative participatory techniques and observation, and finally informal visits to organisations providing printed agricultural information. Participatory processes and tools included group interviews, seasonal calendars, ranking, voting, time lines, and a show of hands to determine literacy and education levels and access to mass media sources. Emphasis was placed on investigating information flows with established groups rather than individuals. Group interviews allowed for a much larger sample size. Preferences for design layout were established by using sample pages of the *Footsteps* newsletter with a range of typeface sizes, page layouts and illustrations. The research findings indicated that where farmer groups were open to new ideas and prepared to make changes, access to printed information would be of great benefit to these farmers. Carter (1999:81) found that sample farmer groups experienced "... a great and largely unmet desire for information in any form", but also for printed information in a form that was easy to share within their groups. Locally generated printed materials were scarce, but some were available. The findings also confirmed that farmers supported each other in their work and informally shared advice and information among each other, and that groups provided effective means for information sharing.

## 2.11 Summary

This literature review has highlighted the complex nature of information, in its various forms and channels, as used by small-scale farmers. Factors influencing such use are the nature of use itself, the effectiveness of intermediaries in small-scale farmers' access to information, preferences for particular information channels, the effect of language preferences and literacy levels (including visual literacy) on the use of printed materials, and the blending of traditional and research-based scientific knowledge. Finally, the provision of appropriate printed materials

specifically within the field of organic production was discussed. The following chapter will discuss the characteristics of the survey area, the sample and the methodology applied to the study.

CHAPTER 3  
STUDY METHODOLOGY

This study was conducted with farmer groups in KwaMashu and Umbumbulu in the district municipality of Ethekewini (south-eastern KwaZulu-Natal), and Tugela Ferry and Mudén in the district municipality of Umzinyathi (central KwaZulu-Natal) (Figure 3.1). KwaMashu, a highly populated urban township, is situated 18km north of Durban’s city centre. Umbumbulu, a rural district, lies 51km south-west of Durban and 70km south-east of Pietermaritzburg. Tugela Ferry and Mudén, which are situated 42km and 35km respectively from Greytown in a northerly direction, are in rural Msinga.

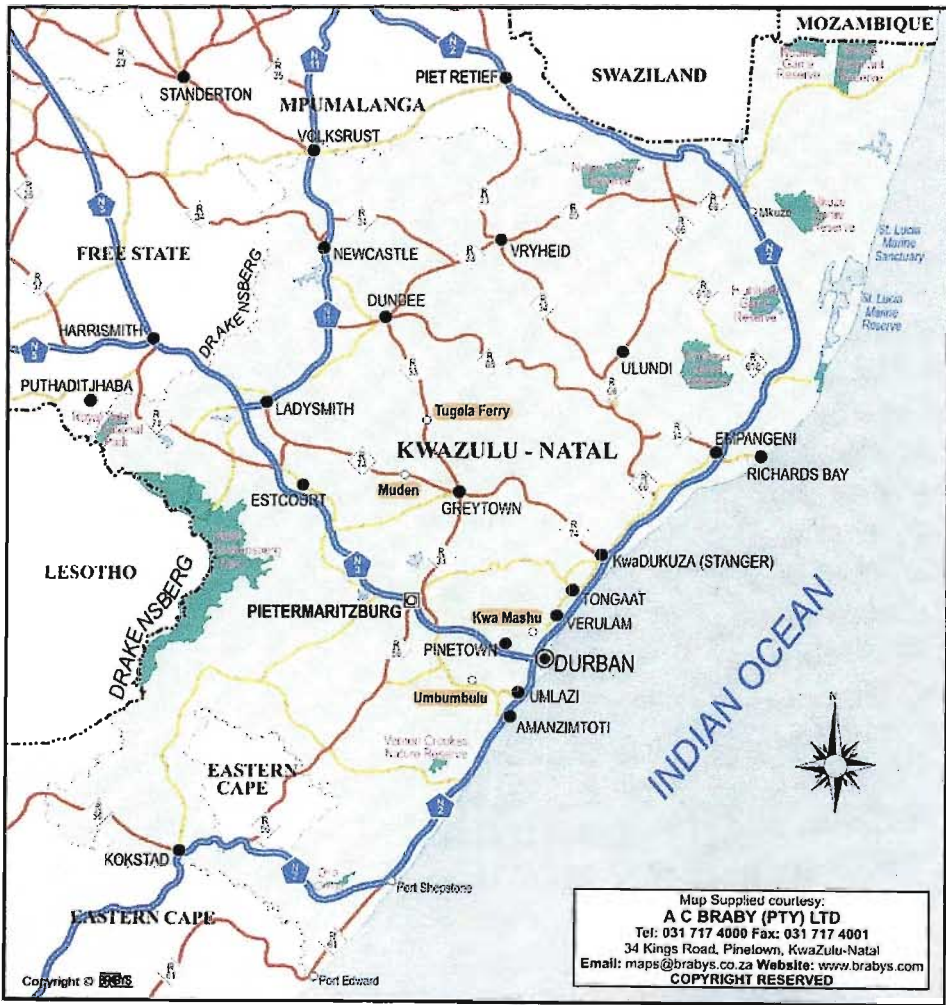


Figure 3.1 Map of KwaZulu-Natal, showing the four areas where research was conducted. (AC Braby (Pty) Ltd undated).

### 3.1 Population and sample selection

Purposive sampling was used to select appropriate small-scale farmer groups in KwaZulu-Natal. The desired characteristics of these participating groups were that they were assisted by intermediaries (such as extension officers from government departments, NGOs and university researchers) and were converting to and/or experimenting with organic farming. Seven intermediaries were identified and contacted to assist with the identification of and access to suitable farmer groups. Three intermediaries were able to establish links between the farmer groups and the researcher, and assist in setting up workshops with the farmers. Details of individual groups are presented in Chapter 4.

Members of each group were invited to attend a group workshop to evaluate their access to and use of printed information, and to determine their preferences for information channels. Farmer groups were encouraged to arrange for a representative sample of volunteers to meet the researcher. Volunteers within each group represented a diversity of ages (young and old), gender (male and female), authority levels (leaders and ordinary members), and functionally literate and illiterate members (those who had not attended school through to those who had at least completed grade 7). A minimum of 10 and maximum of 18 participants was requested for each workshop. These parameters were set to ensure that groups were neither too small to glean a variety of views and experience from participants, nor too large for all participants to be able to make meaningful contributions within the time allocated.

Gaining access to rural people for research to facilitate their development is an important part of the research process. Intermediaries who work over a period of time with their client communities build rapport and trust, and this trust is transferred to researchers who gain access to groups through such intermediaries (Leach 2001). This was found to be the case with the farmer groups introduced to the researcher. However, trust cannot be obtained overnight, and Botha and Treurnicht (1997) suggest the genuine belief that one can and must learn from local people is the starting point for Participatory Learning and Action (PLA).

### **3.1.1 Ezemvelo Farmers Organisation (EFO) - Umbumbulu**

The researcher was invited by Dr Albert Modi (Senior Lecturer in Crop Science at the University of Natal, and on farm researcher with the Ezemvelo Farmers Organisation) to attend the monthly meeting of EFO on 2 June 2003, where she introduced the nature of the research and requested permission to run a workshop. Twenty-eight farmers were present at the monthly meeting. The group agreed to a workshop, which was to be held on 9 June 2003 at a local church hall. Eighteen members volunteered to attend. The volunteers were enthusiastic and keen to participate.

### **3.1.2 Vukusakhe and Siyenza Garden Clubs - KwaMashu**

The chairman of the Vukusakhe and Siyenza Garden Clubs, Mr Gwala, was introduced to the researcher by Mr Walter Coughlan of the Newlands Mashu Permaculture Learning Centre (NMPLC). Mr Gwala was very interested in the study and agreed to ask the garden club members to be included in the research. The researcher contacted Mr Gwala by telephone after his meeting with the garden clubs, and the workshop date was set for 8 July 2003 at the local Catholic Church in KwaMashu with which the NMPLC has strong links. Fifteen members of the two garden clubs volunteered to attend the workshop.

### **3.1.3 Tugela Ferry and Mudén Farmers**

Access to farmers in these areas was relatively easy as they were known to the researcher who had met them through Farmer Support Group (FSG) during 2002. Members of FSG's Msinga Project team, specifically Thabile Khuboni and Ngcempilo Khanyile, provided access to these farmers. Ngcempilo Khanyile introduced the theme of the research to the farmers, and arranged for volunteers from their groups to attend workshops to be held at Tugela Ferry on 25 June 2003 at the Tribal Court and at the Department of Agriculture office at Mudén on 3 July 2003. The workshop for 3 July 2003 at Mudén had to be postponed to 10 July 2003 due to a clash with a pension payout day. On the 10 July, two farmers arrived at the workshop venue to advise the researcher that due to the death of one member of the farmers' group, the workshop could not be held. Attempts to set another date with the two farmers failed due to their upcoming schedule, however two farmers volunteered to stay on and work through the workshop programme with the

researcher and translator on behalf of the whole group. The results for the Muden group therefore only reflect these two farmers' views and experience.

Farmer groups involved in the study recommended venues for each of the workshops, which proved conducive to the research, as farmers were familiar with the facilities and not inhibited by new surroundings. These venues also proved convenient to farmers as they were situated close to their homes.

As the researcher does not speak isiZulu, Bongi Bhengu, a student who is familiar with participatory development and small-scale farming, was engaged to assist with translating the proceedings during the workshops. Leach (2001b) refers to the use of translators as both advantageous and disadvantageous. Disadvantages of using a translator include increased duration of the workshop due to translations and possible misrepresentation or loss of nuances during the translation (Leach 2001b). However, engaging a translator enables participants to converse in their home language (isiZulu), and the translator may help put participants at ease (Leach 2001b).

### **3.2 Pre-test of workshop process**

The workshop process was pre-tested on 27 May 2003 with a group of community gardeners in peri-urban Ntshongweni, 35km west of Durban. These farmers had been exposed to ecological farming methods over a five-year period through the Mlazi Catchment Management Programme (MRCP). The guidelines for the composition of the group was the same as for the research process (section 3.1). Fifteen farmers attended the workshop.

The pre-test helped develop rapport between the researcher and the translator, and facilitated the refinement of the workshop process. In particular, irrelevant questions were highlighted and removed from the proceedings of later workshops. The pre-test also showed that the number of printed information materials that were to be introduced in the workshop needed to be reduced from eight to five publications, based on available time and the design and content of the publications.

### **3.3 Research phases**

Contact was made with NGOs, University of Natal's School of Agricultural Sciences and Agribusiness, and church-based organisations in KwaZulu Natal who work with subsistence and small-scale farmers in organic farming and ecological landuse. These intermediaries assisted in identifying appropriate farmer groups for the research process. Once identified, qualitative and quantitative research was conducted based on participatory principles. Mukhala and Groenewald (1998) found Participatory Action Research (PAR) principles well suited to document the experiences and perceptions of small-scale farmers. Likewise, Carter (1999) used a participatory approach and Participatory Rural Appraisal (PRA) tools to capture qualitative and quantitative data from farmer groups in Ghana and Uganda. PRA, latterly called Participatory Learning and Action (PLA), emphasises the generation of knowledge from the perspective of the sample/participants and not only from the researchers point of view (Mukhala and Groenewald 1998).

A certain tension existed in developing the methodology using a PAR approach and PLA tools, since the focus of the research was about the use of externally generated resources rather than local resources. Bembridge and Tshikolomo (1992) showed that there was little access by small-scale farmers to printed materials. Therefore, it was anticipated that the participating farmers had little access to printed agricultural materials, and would need to be introduced to such materials in the workshop. For the research to be consistent across the four groups, the same materials needed to be introduced in the workshops.

### **3.4 Survey materials and approaches**

The workshops were planned according to Participatory Action Research principles (Trust for Community Outreach and Education 2001). Community development requires (among other aspects) the principle of learning, where everyone, including the facilitator, is part of a learning process, and the principle of participation, where every individual has the right to participate in the decision-making processes which affect their lives (Trust for Community Outreach and Education 2001). The guidelines for the composition of the volunteer groups were designed to ensure that these participatory principles were included from the beginning of the research by requesting that diversity within groups was represented, as discussed in section 3.1.



The participatory tools used in the workshops were semi-structured group interviews, ranking and scoring, and information tabulation. Participants were encouraged to share stories from their own experience in relation to questions and the researcher and translator used their own observation in deciding when to probe for clarification and/or confirm participants' responses. Details follow on each of the tools used.

### **3.4.1 Semi-structured group interviews**

Semi-structured group interviews are at the core of PLA (Botha and Treurnicht 1997). Semi-structured group interviews are guided conversations where broad questions are asked and new questions are allowed to arise as a result of the discussion (Woodhill and Robbins 1999). The process of a semi-structured interview involves the interviewer presenting the context of the study and its objectives to the interview group. Interviewees are then encouraged to express opinions through discussion. Probing questions follow a logical sequence to help the discussion flow. Leach (2001b) used a similar technique called 'structured focus groups', recommended by Kerslake and Goulding (1996, cited by Leach 2001b), in his research with rural adults on the provision of information in a rural context. The structured focus group interview process ensures that responses are elicited to specific questions, ensuring the discussion relates to the topic; all participants participate; and transcribed data is easy to compare between groups and analyse (Kerslake and Goulding cited by Leach 2001), although this approach may give rise to some non-comparable data. Focus groups interviews provide insight from the data collected, because participants' feelings and opinions about a problem, experience or service are obtained during the process (Basch 1987).

This tool was chosen for the following reasons (after IIED 1994, Woodhill and Robins 1999):

- individuals learn from information shared by others within collective settings, whereas individual interviews prohibit such exposure to relevant information and learning;
- group members can verify or challenge information given by individuals;
- multiple perspectives can be gleaned;
- the process is relatively short compared with individual household visits; and
- the process encourages debate about change and seeks to motivate people to take action to improve their situations.

Eleven questions, within five categories, were developed for the semi-structured group interview (Table 3.1). See Appendix B for the group interview schedule used for this workshop programme.

Table 3.1 Five categories of questions for the semi-structured group interview

Category	Questions
1. Background on printed information in general	What printed information have you received in the past? What stops you from using printed information? If you cannot read printed information, who do you get to read it for you?
2. Background on agricultural information	Where do you get information on farming? Where do you go to get answers to a specific problem?
3. Background on printed agricultural information	Have you ever used printed information to help you try out new methods in your farming? Give examples. Have you ever shared printed information with other farmers?
4. Preferences for design layout	What do you like and dislike about the printed materials shown to the group? (Newspaper, newsletter, books, poster, infotoons)
5. Access to printed information on organic farming	Have you received any printed information on converting to organic farming methods and marketing? If printed information on organic farming, certification and marketing was available, would you want to receive it, and if yes, why? What information do you need on organic farming methods and marketing?

In developing the questionnaire, key elements were considered (Anon undated): no leading questions; short and easy to understand questions; and a careful progression to sensitive questions towards the end of the workshop (for example, the process to determine level of schooling completed, and the ability to speak, read, write isiZulu and English). Questions were raised in an open forum, and all participants were encouraged to comment on and discuss the topic. The researcher probed for more information when comments were vague, and encouraged participants to give personal accounts to illustrate their comments.

The data gathered from this process gave insight into the participating farmers’ perceived information needs in respect of organic farming, certification and marketing, their preferences for information channels, access to and usage of printed information and printed agricultural information, and preferences for design layout of printed information.

### 3.4.2 Information tabulation

The information tabulation tool represents information in a way that makes it easy to comprehend and analyse. It is important for the facilitator to decide what form of information will provide the greatest insight for the purposes of the evaluation, and organise the information in this way (Woodhill and Robbins, 1999). The information tabulation tool was chosen to gain quantitative data on participants' age, gender, and level of schooling completed. Participants were each given a sticker (blue for men and yellow for women) and asked to write their age on it. A sheet of flip chart paper, headed "Schooling" with a grid depicting each grade (standard), was pasted on the wall. Participants were invited to place their sticker next to the grade (standard) they had completed. The translator assisted those who could not read or write. Figure 3.2 shows a farmer affixing her sticker to the schooling tabulation chart, while Figure 3.3 shows the completed schooling tabulation chart from the workshop held at Tugela Ferry.



Figure 3.2 A farmer affixes her sticker to the schooling tabulation chart at Tugela Ferry, July 2003.

The information tabulation tool was chosen for the following reasons (after IIED 1994, Woodhill and Robins 1999):

- people can be sensitive about their level of education and their age. It was deemed important to provide a tool which would allow a degree of confidentiality, if desired;

- when a number of questions are asked, participants can become confused and a show of hands can elicit inaccurate results;
- three questions could be answered at the same time; namely age, gender and level of schooling;
- a change of modality from verbal answers to writing and pasting on a sheet of paper provides variety;
- recording information visually and displaying it on the wall makes it more accessible to participants;
- participants can refer back to information given at an earlier stage of the workshop.

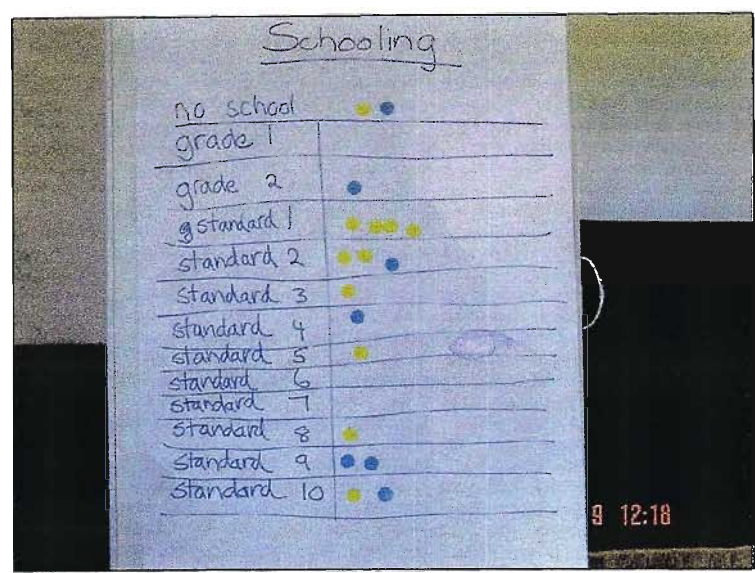


Figure 3.3      The completed schooling tabulation chart from the workshop at Umbumbulu, July 2003.

This process was conducted between semi-structured group interview questions 6 and 7, by which time the issue of hindrances to use of printed information had been discussed and participants would have had time to relax and feel comfortable with the researcher and translator.

**3.4.3    Selection of printed agricultural information materials for small-scale farmers**

In the current study five different printed agricultural information materials were introduced and discussed one at a time. The materials were: a newspaper (*Learn with Echo*), a newsletter (*Vikela*), two books (*Peoples' Workbook* and *Peoples' Farming Workbook*), a poster (*Landcare*)



and a step-by-step manual (*Infotoons*) (Appendix E). Table 3.2 provides details of each publication.

Table 3.2 Printed agricultural information materials introduced and discussed in the workshops

Publication	Source
<i>Learn with Echo</i>	A weekly supplement in The Witness, Pietermaritzburg's daily newspaper, on Thursdays. Posted free on request to readers who are attending literacy classes.
<i>Vikela</i>	Published by the Farmer Support Group (FSG). Distributed to community members who participate in their projects, as well as to academics, researchers, extension officers and other NGO staff. Available free on request from FSG.
<i>Peoples' Workbook</i> and <i>Peoples' Farming Workbook</i>	First published by the Environmental and Development Agency (EDA), 1980. First published by David Philip, 1995. Available from the publisher. (note: The Peoples' Farming Workbook first came out as part of The People's Workbook. The information in The Peoples' Farming Workbook has been updated to include new thinking on agriculture, more realistic costs, and easier language for those who do not understand English very well.)
<i>Landcare Poster</i>	Published by the National Landcare Secretariat. Available free of request from their national and provincial offices.
<i>Infotoons</i>	Published by the Agricultural Research Council and the Landbank. Available free of charge from branches of the Landbank.

These materials were specifically chosen because they contain key characteristics that needed to be evaluated, and they are or have been available to small-scale farmers in KwaZulu-Natal. The materials also partially comply with the guidelines for various aspects of printed agricultural information materials recommended by Morris and Stilwell (2003) and Morris (2001), such as content, readability and comprehension, and layout and legibility. Table 3.3 gives the key characteristics of each type of publication selected for use in this study.

Table 3.3 Key characteristics of the five categories of printed information materials.

Characteristics	Newspaper	Newsletter	Books	Poster	Step-by-step manual
Number of pages	4	24	250 & 560	1	44
A2				*	
A3	*				*
A4		*	*		
A5			*		
Small typeface					*
Large typeface	*	*	*	*	*
Photographs	*	*	*		
Drawings	*	*	*	*	*
Colour				*	*
Black and White	*	*	*		
Cartoons	*		*		*
Step-by-step instructions	*	*	*		*
Stories about people and events	*	*			
Local content	*	*			
Conventional farming	*		*		*
Organic farming	*	*	*		*
Ecological landuse		*	*	*	*
IsiZulu	*	*			
English	*	*	*	*	*
Readability (simple sentence and word construction)	*	*	*	*	*
Very few words				*	
Few words					*
Many words	*	*	*		

The introduction and perusal of, and discussion on these printed materials and the subsequent ranking of preferences in respect of design layout, enabled the researcher to validate information given earlier by participants regarding their levels of functional literacy. This process also demonstrated whether participants were interested in finding out what was contained in the materials, whether the materials were easy to follow, and whether participants wanted to receive such materials in the future.

#### 3.4.4 Sorting and Ranking

Oral and visual tools are key tools in participatory inquiry (Pretty et al. 1994). Sorting and ranking helps participants to understand decision making and reveal preferences (Blancas and Mathias 1996). Sorting is defined as dividing objects or ideas with special qualities into groups.

Ranking is ordering objects or ideas according to specified criteria. This tool was selected to build on information generated by question eight of the semi-structured group interview process (Appendix B). Ranking was used to elicit preferences for design layout, using printed materials produced for farmers and newly literate readers.

The choice of the sorting and ranking tool was based on the following guidelines (after IIED 1994, Blancas and Mathias 1996, Woodhill and Robins 1999):

- When a number of questions are asked, participants can become confused and a show of hands can elicit inaccurate results;
- A shift of modality from verbal answers to physically building a visual display provides variety;
- Trends can be seen easily and interpreted by participants;
- All group members participate and have an equal say in the proceedings.

For question 8 of the semi-structured group interview process, the researcher introduced the participants to five different printed materials (Table 3.2) and asked for comments on what they liked and disliked about the materials. The reason behind exposing farmers in the workshop setting to printed information on agriculture, which is produced specifically for the development context, was to increase their awareness of what printed agricultural information is available, and at the same time determine whether any of these materials were known to them.

Once farmers had discussed their preferences for the different design layouts, the sorting and ranking processes began. The researcher set out on a table the five types of printed materials to be discussed, and labelled them in isiZulu according to their category, namely a newspaper, a newsletter, books, a poster and step-by-step manual. These materials were referred to during the next stage of the process.

During the pre-test at Ntshongweni and the first workshop held at Umbumbulu, farmers were asked to indicate which of the printed materials would be their first preference, using a show of hands for each of five categories of design layout. However, before the next workshop at Tugela Ferry, the ranking process was re-designed to better facilitate the recording of farmers' three preferences for design layout, as it became apparent to the researcher that the data could be

enriched. A sheet of flip chart paper was prepared with the five categories of printed materials written in isiZulu in the left-hand column, with blank spaces in the right-hand column. Participants were asked to vote individually for the category of printed materials which they liked best (Figure 3.4). To emphasise that this was the one they preferred above the others, the researcher rephrased the question to say “If you could have only one of these printed materials, which one would you choose?” They were given a **purple triangle** paper cut-out which they placed in the empty column next to their preferred category.

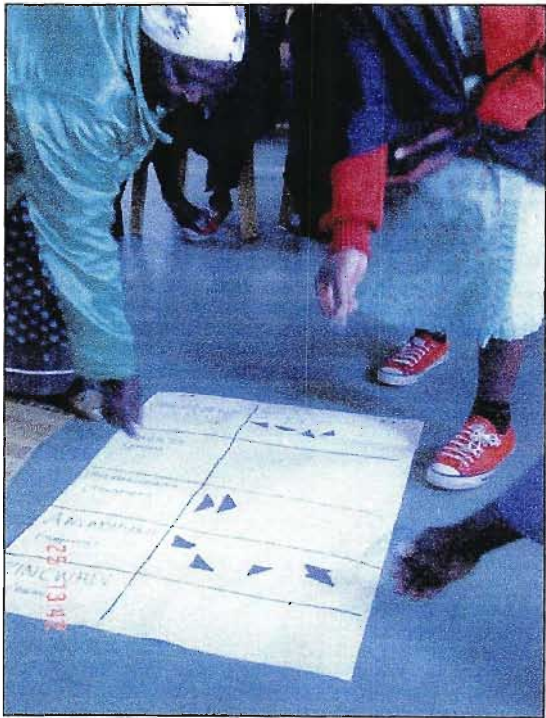


Figure 3.4 Farmers voting for their first choice of printed materials. Tugela Ferry, June 2003.

This process was repeated for farmers’ second choice of printed material, using a **green circle** paper cut-out, and for their third choice of printed materials, using an **orange rectangle** paper cut-out. After each stage was completed, the number of votes for each category of printed material was recorded. Figure 3.5 shows a completed ranking chart and key.



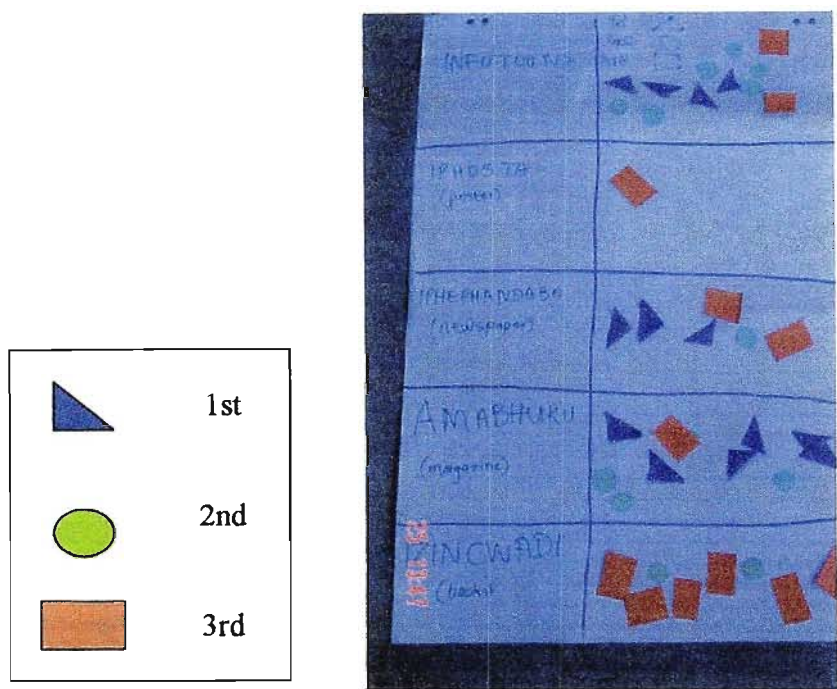


Figure 3.5 Completed ranking chart of farmers’ preferences for printed materials, Tugela Ferry, July 2003.

**3.4.5 Direct Observation**

The researcher and translator relied on observation to validate verbal information given in response to questions. This can be a useful, unobtrusive tool that verifies information given explicitly (Botha and Treurnicht 1997). At the end of each workshop, the researcher and translator compared their observations, attempting to develop meaningful interpretation of the workshop proceedings. These discussions were very valuable in bringing out different perspectives of the events of the day.

**3.5 Factors investigated in the study**

The factors investigated in the study were: farmers’ access to innovative, research-based information; preferences for information channels and design layout; the effect of literacy and language on the use of printed information; and the provision of printed information on organic

farming. Table 3.4 shows which tools were used to investigate, measure and analyse the data in the workshop process.

Table 3.4 Factors investigated, measured and analysed in the workshop

Sub-problem	Tool used
Farmers’ access to innovative, research-based information.	Semi-structured group interview questions 1, 2, 3, 4, 6, 9.
Preferences for information channels.	Semi-structured group interview questions 1, 2, 3, 4, 5, 8. Ranking; Observation.
The effect of literacy and language on the use of printed information.	Semi-structured group interview questions 5, 6, 7, 8. Information tabulation, Observation.
The availability of printed information on organic farming.	Semi-structured group interview questions 9, 10, 11.

3.6 Data treatment and analysis

The researcher captured the data gathered during the workshops in English once participants’ comments had been translated from isiZulu. The literacy, ranking and tabulation processes were captured in Excel 2000, and will be reported on in Chapter 4. See Appendix C and F, G and H for raw data. Photographs of the workshop process are captured in Appendix D, depicting participants’ interaction with printed materials introduced in the workshop. In the next chapter, a thorough analysis of the results of the research will be made. These results will be evaluated in relation to the research problem and sub-problems.

## **CHAPTER 4**

### **RESULTS AND DISCUSSION**

The aim of this study was to establish how small-scale farmers in KZN, who are experimenting with and/or converting to organic farming, access and use printed agricultural information. The study also aimed to determine participating small-scale farmers' preferences for information channels.

#### **4.1 Profile of participating farmer groups in KwaZulu-Natal**

Research was conducted with four farmer groups in KwaZulu-Natal during June and July 2003. A profile of each farmer group follows.

##### **4.1.1 Ezemvelo Farmers' Organisation - Umbumbulu**

Community gardeners in the Umbumbulu area were growing vegetables using conventional methods when Dr Albert Modi, of the University of Natal's School of Agricultural Sciences and Agribusiness, started working with them in 2000. Dr Modi and the farmers identified the potential for growing traditional and conventional crops in their homestead gardens for sale to organic outlets. At the time of this study, the areas under production per household ranged from half a hectare to five hectares. The farmers formed the Ezemvelo Farmers' Organisation (EFO) in 2001 to facilitate collective marketing and organic certification. The EFO was the first black small-scale farmers' group in the country to gain the status of organic 'certification in progress'. At the time of the study they supplied organic baby potatoes, amadumbe and sweet potatoes to a large retail food chain via a commercial packhouse. The EFO had grown to over 120 members.

##### **4.1.2 Vukusakhe and Siyenza Garden Clubs - KwaMashu**

The Vukusakhe and Siyenza Garden Clubs had 10 members each and grew vegetables based on organic principles in their half a hectare community gardens. The Durban Metropolitan Department of Parks and Gardens donated unused land for agricultural purposes to 15 garden clubs in KwaMashu (including Vukusakhe and Siyenza Garden Clubs). Representatives from the two clubs attended an introductory permaculture training course offered at the Newlands Mashu Permaculture Learning Centre (NMPLC) early in 2003, and received ongoing support from the

centre in the form of assistance with funding applications, development of business and marketing plans, networking contacts, and seedlings. Club members grew vegetables for their own use, donated to the needy in their area and sold to the local market. As they were still experimenting with organic production, they reportedly did not fetch premium prices when selling locally.

#### 4.1.3 Tugela Ferry and Muden farmers

In 2001 farmers from Tugela Ferry and Muden interested in experimenting with organic farming and ecological landuse were invited to work with the Farmer Support Group (FSG), an NGO based at the University of Natal's Centre for Rural Development Systems in Pietermaritzburg. Approximately 50 individual farmers from various wards in the Msinga district attended training with FSG in participatory development, and organic farming and marketing over a two-year period. These farmers visited the Pietermaritzburg and Durban Produce Markets and an organic produce packhouse in the Assagay Valley, as well as other farmers who used organic and/or traditional farming methods. Some of these farmers were termed 'Master Farmers' because they readily experimented with and adopted innovations that suited them, and shared their skills and knowledge with other farmers. During this time FSG produced and distributed three issues of their newsletter *Vikela* to these farmers. The newsletter focused on FSG's project activities, farmer profiles and information on organic farming and ecological landuse. Plots (called 'beds') within the various 'plantations' (large tracts of land under canal irrigation) were typically units of 0.1 hectare, and farmers owned or rented varying numbers of beds. Summer and winter vegetables were sold either on a small scale to local markets or in bulk to buyers from towns and cities who collected on-farm by truck.

#### 4.1.4 Demographic profile of participating small-scale farmer groups

While all four groups were experimenting with or converting to organic farming, they had distinct differences in the way they operate. Table 4.1 shows the demographic profile of the sample.

Table 4.1 Demographic profile of participating small-scale farmer groups in KwaZulu-Natal, June and July, 2003.

	<b>Ezemvelo Farmers' Organisation</b>	<b>Tugela Ferry Plantation farmers</b>	<b>Vukusakhe and Siyenza Garden Clubs</b>	<b>Muden Irrigation Scheme farmers</b>
Location	Umbumbulu	Tugela Ferry	KwaMashu	Muden
Approximate number of farmers per group	54	32	20	22
Study participants	18	13	13	2
Supporting Organisation	University of Natal, Discipline of Crop Science	Farmer Support Group	Newlands Mashu Permaculture Learning Centre	Farmer Support Group
Farming system	Individual homestead gardens of up to five hectares	Between one and 10 beds per farmer in the plantations	Collective farming in community gardens	Between one and 10 beds per farmer in the irrigation scheme
Marketing	Collective marketing and sale of produce	Individual sales	Personal use, donations and collective sale	Individual sales
Organic status	Organic certification in progress	Experimenting with organic farming methods	Using permaculture methods	Experimenting with organic farming methods

In order to evaluate how these farmers access and use printed information, as well as their preferences for information channels, an understanding of the aids and constraints to information use was investigated. This investigation included farmers' current access to innovative research-based information; preferences for information channels; background on farmers' literacy and language status; and the availability and suitability of printed materials on organic farming. Printed materials designed for small-scale farmers were introduced in the workshops, and their preferences for design layout established.

#### 4.2 Intermediaries as a channel of innovative, research-based information

While most farmers reported having been taught to farm by their elders, and approaching other farmers and community members for advice on specific farming problems, the findings show that the four participating farmer groups relied heavily on intermediaries such as NGOs, university researchers and KwaZulu-Natal Department of Agriculture extension officers as their major sources of and/or channels to access innovative, research-based information. Each of the farmer groups interviewed requested the aforementioned supporting organisations (Table 4.1) to assist

them once they became aware of the potential benefits of organic farming. This correlates with Greenberg's (1999) and Abbott's (1989) views regarding bottom-up information seeking behaviour, where farmers decide for themselves what their priorities are and then search for information. As one EFO farmer said: "We know about growing traditional crops, but we need information on new methods of farming and marketing." This demonstrates that farmers seek out sources of, and channels for, accessing new information once they become aware that they lack such information.

Harris (1984), Mchombu (1993) and Burton (2002) argue that most people in underdeveloped communities do not know what information they lack or do not know that information is available and can be used to solve their problems. This was confirmed by comments made by a number of farmers. Two farmers reported that they did not use printed agricultural materials because they "... do not need to read about something in books that we already know", indicating that they were not aware that printed agricultural materials may provide them with new information. Another farmer, who perused one of the agricultural books introduced during the workshop, stated excitedly: "I wish I had a book like this when I was younger. It can help a lot." His comments illustrate that he had been unaware that information that he needed was available in printed form. The majority of participating farmers were eager to get copies of the printed agricultural materials introduced in the workshop because they saw information in these materials that could assist them in their farming. Some farmers took down details of the publisher and ISBN numbers of the *People's Workbook* and the *Peoples' Farming Workbook* so that they could order them.

The research showed that participating farmer groups were not receiving printed information regularly from the intermediaries with whom they work. Intermediaries, such as the FSG, NMPLC and the University of Natal's Discipline of Crop Science, used research-based printed information themselves and then passed such information on to farmers through workshops and training programmes. These programmes included demonstrations, on-farm experiments, cross-visits to other farming communities, and advice on organic farming, certification and marketing. Farmers, therefore, were receiving innovative information. However, they were dependent on intermediaries who made decisions about what information was passed on and to whom. This

emphasises the important role that intermediaries play in linking farmers to research-based information, as stated by Bembridge (1997) and Van Rooyen et al. (2001). It also confirms the view by Uphoff et al. (1998) that information needs to be dispersed to those who can put it to use.

A few participating small-scale farmers reported that on a occasion they accessed independent or stand-alone printed agricultural materials from seedling suppliers, and seed and chemical companies, which they referred to and shared with other farmers. However, they reported that there were almost no stand-alone printed agricultural materials available in their areas.

The findings indicate that intermediaries play a role in combining local knowledge and expertise with innovative, research-based information through experiments and projects. However, such synergistic traditional/indigenous knowledge and innovative information in printed format, as described by Karlsson 1994 (cited by Morris and Stilwell 2003:73 and Morris 2001:64), is reaching only two of the four participating farmer groups. This is because the NGO (FSG) that works with these two groups also provided *Vikela* as part of its project activities.

In summary, the question regarding how small-scale farmers access innovative, researched-based information on farming in general and on organic farming specifically has been addressed. The participating small-scale farmers trusted and relied on intermediaries to provide innovative, research-based information on farming in general and organic farming specifically. However, such information was shared mainly by word of mouth, training and demonstration rather than through printed materials.

### **4.3 Farmers' preferences for information channels**

Farmers accessed agricultural information predominantly through oral forms, such as discussions with local people, advisors, intermediaries, and chemical and seed suppliers. As one farmer put it: "We discuss with people – there is no other way." When farmers were asked where they got their information on farming, and where they went to get answers to specific problems, they first mentioned all their oral channels of information access. After some prompting by the researcher, a few farmers acknowledged other channels, such as printed and electronic media.



Electronic media for information dissemination mentioned by farmers were radio and the television (referred to by one farmer from EFO). However, both radio and televised agricultural programmes were regarded as being irrelevant for participating small-scale farmers. One farmer mentioned that these programmes contained information and recommendations for big commercial farmers that small groups found too expensive to implement. Research was not carried out on farmers' access to and use of ICTs, as only the Vukusakhe and Siyenza Farmers Clubs have electricity in their homes and therefore have the possibility of accessing the internet or CD ROM publications. Not once did the participating farmers refer to knowledge and/or use of ICTs, nor access to and use of computers. The view that ICTs are potential technologies of the future (Morris 2003, LEISA 2002, Mundy and Sultan 2001) for small-scale farmers seems to apply to the participating small-scale farmers in KwaZulu-Natal, and suggests little potential for ICTs unless infrastructure is provided.

The main benefits of using printed information materials, as articulated by farmers, is that they provide a permanent record and important aid to memory, confirming Leach (2001) and Carter's (1999) findings. One farmer said: "You can go back to read it again because you can forget what you are told." Another farmer said that printed materials could be passed on to children, "even if you are dead." These comments confirm Meyer's (2002) view that people may not accurately recall information shared verbally, and may not disperse such information to those who were not within hearing of the verbal exchange.

A minority of farmers confirmed Carter's (1999) findings that new ideas needed not only be presented to them verbally, and that printed materials could play an important role in exposing farmers to new information. One farmer from Tugela Ferry related how she experimented with information in a newsletter, given to her by FSG. This farmer read in *Vikela* how to make an insect-repellant using herbs. She had not seen anyone do this before. She followed the instructions and her experiment worked. The same farmer also reported successfully growing onions with compost and garlic, based on information in the newsletter, whereas previously her onions would rot when she used chemical fertilisers. She carried out these experiments on her own initiative, without prompting from the intermediary. This example demonstrates two important factors. First, the value of intermediaries passing on printed information to farmers (as



highlighted by Uphoff 1998), to stimulate user awareness, (as recommended by Cronin 1981). Second, that farmers experiment with information independently gleaned from printed materials to address their particular problems, reinforcing Abbott's (1989) views on the bottom-up information-seeking approach.

The participating small-scale farmers valued printed materials as a source of information, as was found by Mbozi (2002) and Waters-Bayer (2002). In one case, a farmer in the study sample reported that a visitor from Escort read *Vikela* at her home, and requested copies for herself and for farmers in her community. Four farmers spoke of referring to and sharing printed materials they have had in their possession for many years. In one instance, an EFO farmer had kept and still referred to a Government Gazette from 1956 that lists the growing seasons for various crops. Another EFO farmer used information from textbooks that he has kept from when he taught agriculture at school. A further example is of a farmer from Muden sharing with neighbouring farmers printed information on growing tomatoes. These findings show that when farmers accessed printed information materials that met their needs, they kept it – or 'treasured' it - and used the information over time, as found by Waters-Bayer (2002).

Yet, as with grassroots farmer groups in other parts of Africa (Carter 1999), and rural communities in general in KwaZulu-Natal (Leach 2001), the majority of small-scale farmers interviewed were more comfortable with and preferred verbal or oral means of information provision. When asked what stopped farmers from using printed information, one farmer replied: "I prefer speaking with other farmers." This finding confirms what was reported earlier viz a viz farmers preference for interpersonal communication.

As reported by Hewins (1990) and Poole (1985), selection of a source of information depends in part on the ease with which access to it can be gained. It appears that the majority of farmers did not use printed information not only because of low levels of literacy (discussed in the following section), but also by limited access to printed information. The reasons for this seem to be a lack of finance to purchase materials, unavailability of suitable literature in their local villages written in the vernacular, and failure on the part of intermediaries to pass on relevant, appropriate printed materials. Poor eyesight was also reported as a constraint to use of printed materials by the

participating farmers from EFO. Many of the participating farmers used spectacles when reading the printed information materials during the workshops (Appendix D).

The questions whether farmers have a preference for the channel through which they received information has been partly answered. Since the findings show that participating farmers seldom had access to appropriate printed materials, their preference for interpersonal channels as a means to receive information was to be expected. The results indicate that participating farmers did not prefer one channel exclusively, as evidenced in their valuing of printed materials. No results were available regarding small-scale farmers' views on the authority of printed materials, as participating farmers did not mention this aspect and this information was not directly solicited. However, as some farmers kept and referred to printed materials for many years, it seems that farmers regarded these materials as authoritative.

#### **4.4 The effect of literacy on the use of printed information**

This aspect of the research focused on participating small-scale farmers' levels of literacy in order to determine whether they are able to read, understand and use printed agricultural information materials. Visual literacy was also considered but not systematically measured as this is a vast field requiring further study.

##### **4.4.1 Literacy and levels of education**

Table 4.2 shows the number of participating small-scale farmers who completed various school grades. Twenty-eight percent of the participating farmers had no schooling (Table 4.2). The two farmers who had completed grade 12 had also attained tertiary qualifications. These farmers chose to reflect their qualification as 'completed grade 12' rather than indicate to the group that they had further education. Figure 4.1 shows a chart of the total number of farmers per grade completed.

Table 4.2      Schooling levels completed for each farmer group, June and July, 2003 (n=46).

Standard of schooling completed	Ezemvelo Farmers' Organisation	Tugela Ferry farmers	Vukusakhe and Siyenza Farmers Clubs	Muden farmers	Farmers / grade completed (%)
No schooling	2	7	4	0	28
Grade 1	0	0	0	0	0
Grade 2	1	1	1	0	6.5
Grade 3	4	0	0	0	8.6
Grade 4	3	3	1	0	15.2
Grade 5	1	0	0	1	4.3
Grade 6	1	0	1	0	4.3
Grade 7	1	1	1	0	6.5
Grade 8	0	1	1	0	4.3
Grade 9	0	0	2	0	4.3
Grade 10	1	0	2	1	8.6
Grade 11	2	0	0	0	4.3
Grade 12	2	0	0	0	4.3
Total number of farmers per group	18	13	13	2	

In this sample, more participating small-scale farmers (28%) had no schooling compared with the general population of KwaZulu-Natal (21.9%) (Statistics South Africa 2001). More farmers (31.9% compared with 16.9% for the province) had also attended some primary school but fewer had attended high school (24% compared with 28.8% for the province) (Statistics South Africa 2001). Likewise, fewer participating farmers had completed grade 12 (4,3% compared with 19,8% for the province) (Statistics South Africa 2001). Table 4.3 gives the comparison between KwaZulu-Natal's population aged 20 and above and participating small-scale farmers' completed grades of schooling.

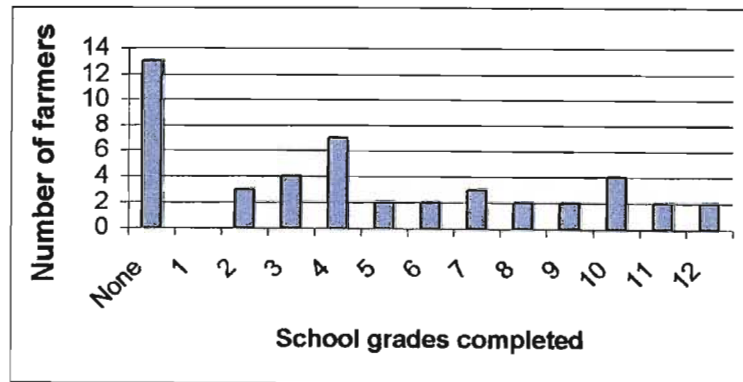


Figure 4.1      Total number of participating small-scale farmers per grade completed (n=46).

Taking seven years of schooling as an indicator of functional literacy (Aitchison 1999), 67,4% of the participating small-scale farmers in KwaZulu-Natal would be considered functionally illiterate, while 28% of South Africa's adults are considered functionally illiterate (Aitchison 1999).

Table 4.3      Comparison of levels of schooling between participating small-scale farmers and the population of KwaZulu-Natal aged 20 and above (Statistics South Africa 2001)

Level of schooling	Population of KwaZulu-Natal aged 20 and above	Participating small-scale farmers in KwaZulu-Natal
No schooling	21,9	28,3
Some primary school	16,9	39,1
Completed primary school	5,7	4,3
Some high school	28,8	24,0
Grade 12/Standard 10	19,8	4,3
Higher education	6,9	0

The findings concur with Bembridge (1997) and Bembridge and Tshikolomo (1992) who state that resource-poor small-scale farmers typically have no or little formal education. Their research indicated illiteracy among their sampled farmers at 50% and 60%, while this study found that 67,4% of the participating farmers would be regarded as functionally illiterate. Despite the majority of participating small-scale farmers having had either no schooling or only some primary schooling, each of the four groups had at least one member who could be regarded as functionally literate (who had entered high school). This finding relates to Carter's (1999) findings in Ghana and Uganda, that groups need just one literate member (or sympathetic non-member) for useful information and new ideas in printed materials to be shared within the group. As one farmer commented: "... the measurements [in the *Infotoons*]. You can get someone from the group to help you read them." However, some farmers were also suspicious that, when enlisting the help of literate farmers, they could be given inaccurate information due to jealousy. Figure 4.2 is an example of a literate farmer explaining to an illiterate farmer written information during the workshop process.



Figure 4.2      Literate farmer from the Vukusakhe Garden Club explaining printed information to a fellow club member during the workshop, KwaMashu, 8 July 2003.

Many of the illiterate farmers interviewed mentioned that they get their children to read isiZulu text to them. Farmers also mentioned that relatives and other farmers assist with reading printed materials. No examples of the “Farmer-to-Farmer” approach (Kruger undated) (where farmers share information with other farmers through demonstration at their own fields), were given by workshop participants. One farmer described how she called farmers together who were not members of the group to share information from *Vikela*, confirming that literate farmers pass on information accessed through printed materials to other farmers.

No attempt was made during the workshop process to determine whether farmers were empowered<sup>1</sup> through the use of printed materials, as this is a vast and specialised field beyond the scope of this study. Farmers did not relate examples that gave clear indications of empowerment as a result of using printed materials.

4.4.2    Visual literacy

While visual literacy among the participating small-scale farmers was not systematically measured, an attempt was made to gain insight into how farmers relate to pictures. The findings

<sup>1</sup> Carter (1999:75) defines empowerment as “the ability of people to control their own lives and resources, to direct their own livelihoods and to extend their spheres of influence outside their immediate community”.

are based on farmers' comments after perusal of printed agricultural materials introduced in the workshop.

Participating small-scale farmers found the inclusion of pictures in printed agricultural materials beneficial, encapsulated in the comments: "Pictures are good"; "It is easy to understand the pictures"; and "When I see the picture, I become interested in the story and read about it." Appendix C, question 8 gives detailed comments made by participants about pictures. Where pictures had no accompanying explanatory text, farmers found messages not altogether clear. For instance, when looking at a drawing of a tractor pulling a log over a field, one farmer could not identify what the tractor was pulling, and why. Only after the researcher explained the drawing to him did he recognise what the activity was. This confirms Bembridge's (1997) and Hoffman's (2000) view that it is beneficial for semi-literate people to have pictures supplemented by the spoken word. Morris (2001) emphasises that instructional pictures may need to be combined with text for messages to be conveyed clearly and comprehensibly. Participating small-scale farmers expressed a desire to have sufficient text to be able to fully understand what the pictures were trying to convey. As one farmer said: "The pictures on their own are not enough to understand." Another farmer said: "It [the picture] is helpful, but needs more writing to fully understand." Most farmers indicated that if the pictures are realistic and descriptive enough, the inclusion of many words is unnecessary, showing that farmers prefer a combination of pictures and text, rather either one or the other. These findings also emphasise the need for pictures that can be easily 'read'.

Farmers also reported preference for step-by-step instructional picture stories, characteristic of the *Infotoons* publication. This concurs with Hoffman's (2000) finding that series of pictures are more effective than single, short and simple messages. Figure 4.3 shows farmers from Tugela Ferry who had never attended school, perusing the *Infotoons* publication.





Figure 4.3 Farmers from Tugela Ferry, who had never attended school, perusing the *Infotoons* step-by-step cartoon during the workshop, Tugela Ferry, 25 June 2003.

While farmers did not comment on whether context-specific graphics facilitated the use of printed materials, as purported by Bembridge and Tshikolomo (1998), a number of farmers reported that they liked reading about people they could relate to, as in *Vikela*, as shown by the following comments: “I liked reading about Tugela Ferry because that was where I was born”; and “I like reading about people that I know.” These comments indicate that farmers were motivated to read articles, particularly where the content conveyed information about specific people and locations to which they related.

De Lange (1999) reported that instructional pictures could significantly facilitate recall and problem-solving skills. While the study did not attempt to determine recall and problem-solving skills within the workshop setting, one farmer from Muden concurred with this view. This farmer commented (after perusing an instructional article with supporting illustrations and photographs): “The article on compost-making reminds me of how my father made compost when I was a young boy.”

As was found by Aboyade (1984) and Basel (1995), where pictures are used without sufficient text they are open to various interpretations based on people’s environment, experience and past exposure to two-dimensional images (which depict three-dimensional concepts). An example of this was a group of participating farmers from Tugela Ferry who identified what they thought

was a 'nunu' (worm) on the *Landcare poster* introduced during the workshop. Figure 4.4 shows a photograph of the specific section of the poster referred to. Appendix E shows a photograph of the full poster. Through discussion with the researcher, the farmers' realised that this was in fact an outlet pipe joining a dam to a river, rather than a worm. This example emphasises the need for pictorial images to be pre-tested with target groups to overcome comprehension barriers, as recommended by Hoffman (2000).

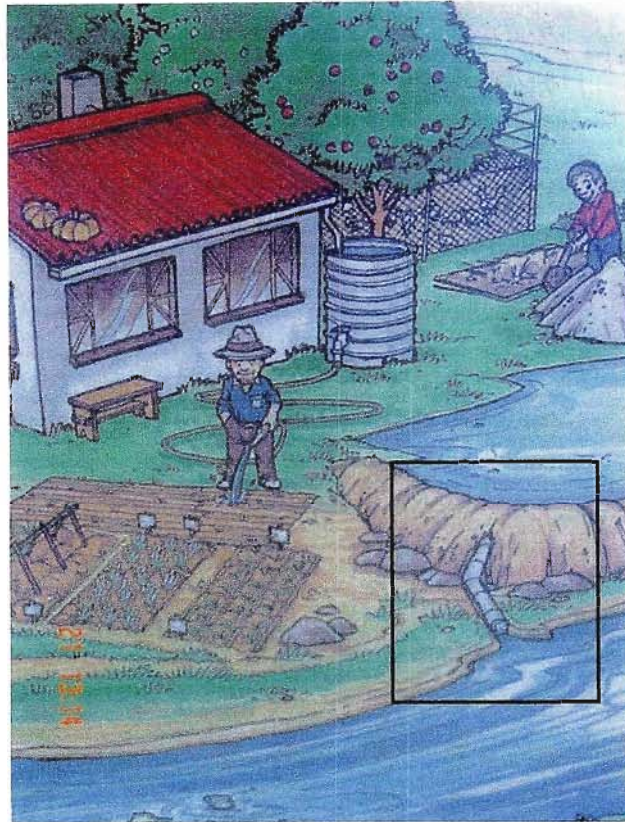


Figure 4.4 Detail of the Landcare poster showing the outlet pipe that participating farmers interpreted as a 'nunu', Tugela Ferry, 25 June 2003.

The question whether literacy affects the use of printed materials by participating small-scale farmers has been answered. The results show that where participating farmers had low literacy levels they found ways to access printed information, such as getting relatives and other farmers to read to them, if they deemed the information important. Functionally literate members within farmer groups shared information from printed materials with the whole group when necessary. Participating farmers found some pictures difficult to interpret, and stated that a combination of sufficient, simple text and descriptive pictures was most beneficial.



4.5 Language preferences of small-scale farmers

Farmer groups indicated whether they spoke, read and wrote isiZulu and English by raising their hands. The researcher and translator discretely verified this information when farmers perused printed materials later in the workshop. For example, some farmers who had no schooling held some of the publications upside down when they first received them during the workshops. Table 4.5 shows the number of farmers who can speak, read and/or write isiZulu and/or English.

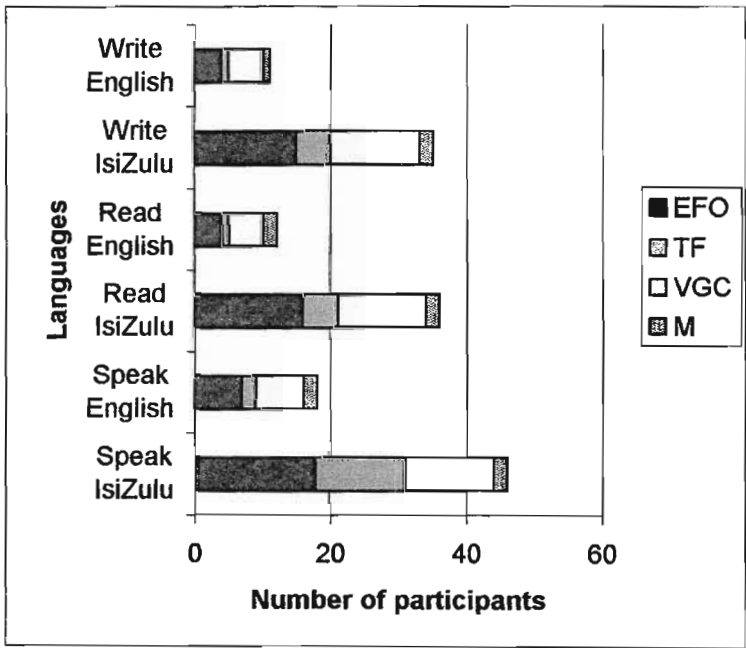


Figure 4.5 Participating small-scale farmers who can speak, read and/or write isiZulu and English, Umbumbulu 9 June 2003 (EFO), Tugela Ferry (TF)25 June 2003, KwaMashu (VGC) 8 July 2003, Muden (M)10 July 2003, (n=46).

Over 75% of the farmers indicated that they were able to speak, read and write in their first language, isiZulu. Only 25% of participating small-scale farmers indicated that they read and write English, and almost 40% speak English. Taking these facts into consideration along with the findings presented in 4.4.1 (majority of participating small-scale farmers have not attended high school), it is understandable that farmers prefer to read articles in isiZulu. Comments like the following showed that farmers found printed materials in their home language preferable to those published in English: “I can understand it because it is written in isiZulu”; “If the book is in

isiZulu, I could read it myself”; and “It (the book) would be better in isiZulu.” Further evidence of this preference were the following comments: “English is difficult to read” and “I like reading stories in isiZulu.” These comments reinforce findings of Mundy and Sultan (2001) and Carter (1999) that rural people in Africa prefer printed materials written in local languages.

In summary, literacy and language played a key role in facilitating the use of printed agricultural information materials by the participating small-scale farmer groups. Illiteracy levels for these farmers were higher than the provincial average, but more than 75% reported being able to read and write in their home language. Approximately 25% of participating small-scale farmers reported being able to read and write simple English. However, when the schooling percentages are compared with the language percentages, a discrepancy arises. With 28% of participating farmers having not attended school, it is unlikely that 75% can read and write in their first language. Since reading ability was not measured during the workshops, these results are inconclusive. It is important to note that participating farmers may have their own perception of what constitutes reading and writing, for example: being able to identify an item on the supermarket shelf and sign one’s own name may be regarded as reading and writing. Each of the four farmer groups had at least one functionally literate member (who attended the workshop). Illiterate farmers regularly relied on members of their group or family, especially children, to read to them. The participating small-scale farmers preferred printed materials in isiZulu, with a combination of illustrations and text.

#### **4.6 The provision of printed materials for potential small-scale organic production**

Despite the large volume of printed agricultural material produced for small-scale farmers by NGOs and local government departments, the participating small-scale farmers have received relatively few printed agricultural materials in the past (see Appendix C). Of the four farmer groups, two had received *Vikela* in the past. However, none of the other four printed agricultural materials had reached the participating small-scale farmers, in spite of the *Infotoons*, *Learn with Echo* and the *Landcare poster* being widely available and free of charge. Bembridge (1997) questions whether disadvantaged small-scale farmers in South Africa have derived economic benefits from the printed materials produced for them. However, before an accurate assessment can be made of whether small-scale farmers have or have not gained economically from

information materials, the problem of ineffective dissemination of printed materials to these farmers would need to be addressed.

An evaluation of printed agricultural materials produced for resource-poor small-scale farmers (recommended by Morris and Stilwell 2003), gave clear indications from the participating small-scale farmers themselves as to what facilitates their use of printed materials. For detailed comments by the participating small-scale farmer groups, relating to the five printed information materials introduced in the workshop, refer to Appendix C, question 8. Figures 4.6 and 4.7 show participating small-scale farmers preferences for printed materials introduced during the workshop.

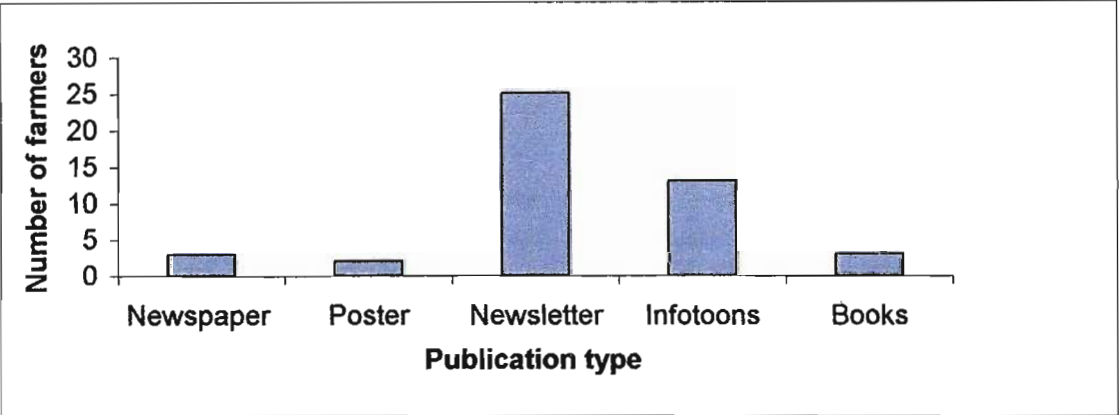
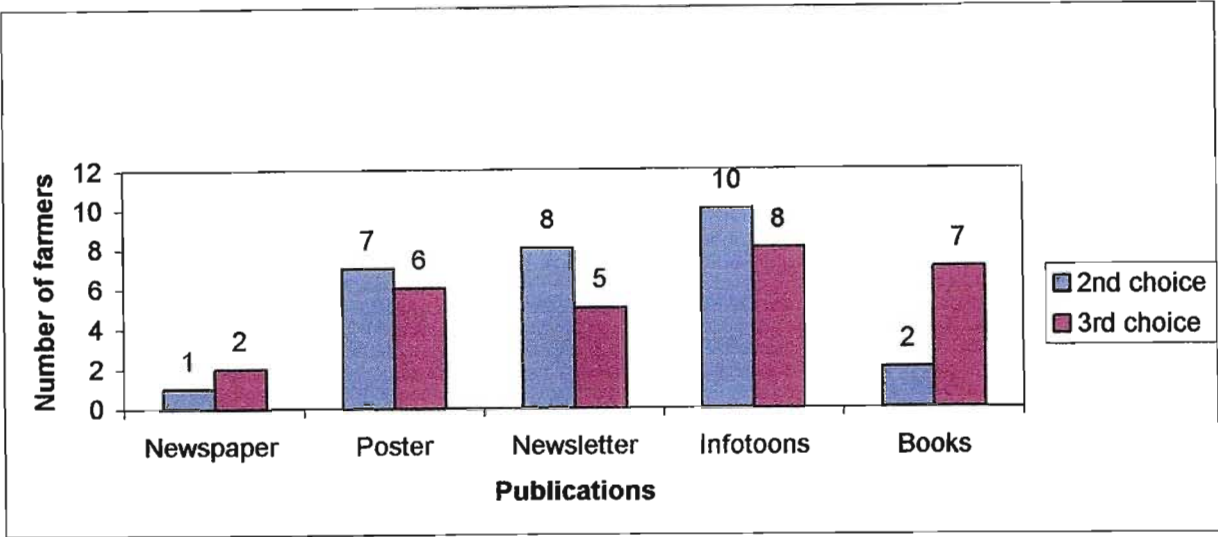


Figure 4.6      Participating small-scale farmers first choice of printed agricultural materials introduced in the workshop, Umbumbulu 9 June 2003, Tugela Ferry 25 June 2003, KwaMashu 8 July 2003 , Muden 10 July 2003, (n=46).

The majority of farmers ranked *Vikela* newsletter as their first choice of the set of printed materials introduced during the workshops. The characteristics of this newsletter, as described in Table 3.2, include large typeface, photographs, drawings, step-by-step instructions, stories about people and events, local content, English and isiZulu versions, and the use of plain language. While two of the farmer groups receive this newsletter on an on-going basis, it is interesting to note that the two farmer groups who saw the newsletter at the workshop for the first time, ranked it highest.



**Figure 4.7** Participating small-scale farmers’ second and third choices of printed agricultural materials introduced in the workshop, Tugela Ferry 25 June 2003, KwaMashu 8 July 2003 , Muden, 10 July 2003, (n=28) .

Many of the participating small-scale farmers reported that they could not read small print and that “big writing is good”. As one farmer said when perusing *Vikela*, which is printed in 13pt “Sandstone” font face with 17 point leading (line spacing): “I can see what is happening, not like my Bible that I can’t read anymore.”

The second most popular publication was *Infotoons*, which is written in simple English and contains few words, many illustrations and step-by-step instructions on a range of agricultural production, storage and processing topics. A number of farmers remarked that this publication was easy to follow as it showed how things are done.

Farmers differed in their attitudes towards the two books introduced in the workshop and which contain information on many aspects of farming and rural life. For some farmers the books contained too much information. They said: “You lose concentration with so much information”; and “You have to have the time to find the information. You will have to read it every night until you know where to find the information.” Another farmer noted: “You will need to find someone who can read it and understand it, who can then tell others.” This suggests language and content barriers to access and comprehension of the information in the books. The two

farmers who had tertiary education as well as a number of the more literate farmers, preferred one book with lots of information on different topics, rather than the others who were overwhelmed by the mass of content. One of these farmers reported that the book was: “... full of good information.” These farmers, referred to earlier, took down the details of the publisher in order to purchase the book. Most farmers reported that they did not like small pamphlets, leaflets and booklets, as these were easily lost.

Farmers found the newspaper *Learn with Echo* easy to read because much of the isiZulu text is in large font. They also reported that it contained important information and had good explanations. One farmer said: “When I see the picture I become interested in the story and read about it.”

The *Landcare* poster, which depicted two illustrations of the same setting (one degraded and one rehabilitated) took the farmers time to decipher accurately. At first farmers looked at individual aspects of the pictures, and only later compared the two pictures and then reached consensus that one picture showed a ‘protected’ area and the other an ‘unprotected’ area. Farmers suggested that the poster needed more explanation to be clearly understood.

No farmer group reported being engaged in producing printed materials with information providers, or developing secondary repackaged materials, as found by Carter (1999) in Ghana and Uganda. However, the findings indicate that context-specific materials attracted the attention of readers and motivated them to read, as reported earlier (section 4.2.2), which suggests the need for participatory information materials development.

The participants reported that they have received very little printed information specifically on organic farming. Most farmers had attended training courses in organic production and been on cross-visits to learn about marketing, while a few farmers had received training in organic monitoring procedures. An internal inspector from EFO, who was responsible for ensuring that the group met organic standards, received printed notes during training. She indicated that she had never referred to these again because they were written in English and were too difficult to read. The NMPLC also provided printed materials at training courses. These too were written in English and do not meet the design guidelines for semi-literate readers. Most of the information

on organic production and marketing for farmers was contained within general agricultural publications, and these materials were written in English, with the exception of *Vikela* newsletter that was translated into isiZulu. What was lacking, as highlighted by Harris et al. (2001), were detailed instructions on application methods and rates for organic fertilisers, and examples of farmers' success stories. Farmers made no reference to accessing and using a comprehensive, up-to-date publication dedicated to organic farming, certification and marketing.

Farmers commented that they wanted printed information on organic production and marketing for the following reasons: "It would help us to be more independent"; "We are still experimenting. We need more information"; and "There are problems with [accessing] markets." With the exception of EFO, farmers stated that they needed information on organic certification. All the farmer groups indicated they specifically wanted printed information on:

- type of produce (what sells well to organic markets?);
- soil testing (that farmers can do themselves);
- organic pesticides and insecticides (to deal with ants, cutworm and moles);
- farming without chemicals (pesticides, fertilizers);
- available markets ;
- sources of funding (for inputs); and
- bookkeeping and finances.

The above suggests a critical need for accurate, up-to-date printed information on organic farming and certification processes and the emerging organic niche market in their own vernacular. While printed materials on organic production and marketing were available, these materials were inappropriately packaged (design layout, language, written at accurate level of literacy) for small-scale farmers and/or not reaching them.

#### **4.7 Summary of results in relation to Poole's propositions**

As discussed in chapter 2.3, information is designed to explain and meet some of the challenges that individuals or groups face at a particular time and place (Mchombu, undated). Poole's (1985) propositions provide insight into information use and information channel use, and

include such factors as accessibility, credibility, noise, user awareness and need. A summary of the finding in relations to Poole's (1985) propositions follows in Table 4. 4.

Many of Poole's (1985) propositions apply to the participating small-scale farmers access, preferences and use of agricultural information, including printed materials. The table also reveals that the most common factor affecting small-scale farmers' use of an agricultural information channel was their awareness of the channel or lack thereof.

Table 4.4 Summary of results in relation to various information use propositions (after Poole 1985)

Results	Propositions						
	Information use is a function of:		Information channel use is a function of:				
	Need	User awareness	Access- bility	Credibility	Need	User awareness	Channel noise
Farmers requested intermediaries to assist them			X	X	X	X	
Farmers do not know what information they need						X	
Farmers have little access to printed materials			X			X	
Oral forms of information access predominate			X	X		X	
Farmers do not access agricultural information via electronic media			X			X	
Printed materials provide a permanent record	X	X		X	X		
Application of innovative information accessed via printed materials	X	X		X	X	X	
Preference for printed materials in own vernacular							X
Preference for a combination of pictures and text							X

A summary of the findings of the study is presented in Chapter 5, with the conclusions and recommendations for further research.



## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to evaluate printed information access, preferences and use by participating small-scale farmers in KwaZulu-Natal, who are experimenting with and/or converting to organic farming, to determine how to meet their needs for new information on organic production and marketing. The following research questions arose:

- How do small-scale farmers access innovative, research-based information on farming in general and on organic farming specifically?
- Do small-scale farmers have a preference for the channel through which they receive information?
- What effect does literacy and language have on participating small-scale farmers' use of printed information?
- Is there adequate provision of printed information on organic farming and marketing for small-scale farmers in their own vernacular?

The results of the study, obtained during three-hour workshops with small-scale farmers in Umbumbulu, Tugela Ferry, KwaMashu and Muden in KwaZulu-Natal, were obtained through semi-structured group interviews, ranking, information tabulation and unobtrusive observation. The findings confirm that participating small-scale farmers relied on intermediaries, such as researchers and practitioners from NGOs, university departments and church-based support organisations, as their main channel of innovative, research-based information. However, these intermediaries rarely passed on printed agricultural information materials to participating small-scale farmers.

Participating small-scale farmers primarily accessed agricultural information through interpersonal communication means, such as workshops, training programmes and

demonstrations. Relative to their interpersonal communications, these farmers seldom accessed printed agricultural information materials. On the rare occasions that participating small-scale farmers acquired relevant printed agricultural materials, they kept these to share with other farmers and refer to over long periods, confirming that they valued these printed materials. The results also indicated that a minority of the participating small-scale farmers applied recommendations gleaned from printed agricultural materials. Participating small-scale farmers generally did not access agricultural information via electronic media because of the absence of such channels.

The majority of participating small-scale farmers either had no formal education or had not completed grade seven, resulting in most of them being considered functionally illiterate. Nevertheless, each participating small-scale farmer group comprised at least one functionally literate member. The fact that over 75% of participating small-scale farmers reported being able to read and write isiZulu, while only 26% reported being able to read English and 23,9% write English, validates their strong preference for printed materials in their first language.

As described earlier, participating small-scale farmers had very little access to printed agricultural materials in spite of the plethora of publications available. Based on printed agricultural information materials introduced in the workshops, participating small-scale farmers' first choice of material was the newsletter *Vikela*. This publication was characterised by articles on other farmers' achievements and activities, step-by-step instructive information accompanied by illustrations, the use of simple language in isiZulu, photographs, and large text. While comprehensive printed information on organic production, certification and marketing in their home language was not available, participating small-scale farmers desired such materials in the belief that these would provide important information and facilitate greater independence from intermediaries on whom they rely for information on organic production and marketing.

## 5.1 Conclusions

Participating small-scale farmers receive limited innovative, research-based information on farming and organic farming methods, with some groups receiving more information than others. However, these farmers are dependent on the intermediaries, with whom they have working

partnerships, to provide them with such information, resulting in a degree of dependency that may be detrimental to the farmers in the long-term. These potentially detrimental effects may include: waiting for information to be provided rather than seeking information independently and receiving only such information that is predetermined to be useful or “screened” by the intermediary. Both these effects are characteristic of the top-down information dissemination approach used in the Transfer of Technology mode of extension. Further detrimental effects may include: the potential for inaccurate or biased information to be passed on and the cessation of information provision should the working partnership end.

Nevertheless, the findings emphasise the important role intermediaries play in linking the participating small-scale farmers with new information. Since a relationship of trust exists between intermediaries and participating small-scale farmers, intermediaries could play a vital role in exposing farmers to alternative sources and/or channels of information. Printed agricultural information materials, containing a wide range of topics, could be useful, independent sources that could meet farmers’ information needs. Intermediaries could, therefore, play a bigger role in sourcing appropriated printed materials and promoting the use of these materials by small-scale farmers. Since very little printed information on organic production, certification and markets is available, intermediaries could also play a pro-active role in producing appropriate materials on these topics for the farmers with whom they work.

Since participating small-scale farmers enjoy reading about other farmers’ activities and achievements, the findings suggest that printed agricultural information materials should include such accounts. This is significant because it highlights the synergistic, two-way flow of information referred to earlier. Printed materials, containing small-scale farmers’ context-specific experience and knowledge, could be developed in conjunction with farmers, to distribute within the province. Such publications should be based on an analysis of farmers’ information needs.

Participating small-scale farmers access innovative agricultural information predominantly through verbal or interpersonal means, in settings such as workshops and training programmes. However, the findings imply that this is not solely because these farmers are comfortable with

and prefer verbal means of communication. As participating small-scale farmers have minimal access to printed materials, and the materials that reach them are often inappropriately packaged, their use of such materials is hampered. The findings suggest that should participating small-scale farmers receive intellectually and physically appropriate and relevant printed agricultural information materials, these farmers would value these materials and safeguard them for use over time.

Evidence from the study shows that the participating small-scale farmers who would be considered functionally illiterate have the means to access information in printed agricultural materials. These farmers refer to more literate farmers within their groups, their children, other relatives and neighbours, to read printed materials for them. This suggests that the relevance of printed agricultural information materials for semi-literate small-scale farmers should not be discarded out-of-hand. More importantly, it is the responsibility of information providers to produce appropriate printed materials that match farmers' preferences and needs, and to ensure that such materials reach these farmers regularly. Since farmers readily refer to each other for information and advice to address specific problems, the provision of appropriate, relevant and accessible printed information materials may facilitate the transfer of research- and experience-based information between farmers.

Participating small-scale farmers are encouraged to read printed materials that are characterised by large typeface, photographs, drawings, step-by-step instructions, stories about people and events with whom they can identify, local content, written in isiZulu, and the use of plain language. These findings point to the fact that innovative, research-based information needs to be appropriately repackaged for these farmers to benefit from them and that pre-testing of materials containing pictorial images must be carried out to ensure correct interpretation by the target readers. As the majority of participating small-scale farmers can read and write isiZulu, these farmers could benefit more from receiving printed materials in their home language rather than in English.

The findings show that no comprehensive printed agricultural materials on organic production, certification and marketing is reaching participating small-scale farmers, particularly in their own

vernacular, and that they therefore lack a permanent record of the complex and growing body of knowledge required to operate effectively within this field. These findings point to the critical need for such publications to be produced, particularly as lack of information is one of the key constraints to development of organic enterprises and efforts to improve livelihoods. Again, printed materials could usefully be compiled in conjunction with training programmes, in order to reinforce the content and provide a permanent record of training programmes.

In conclusion, printed agricultural materials on their own are not sufficient for the participating small-scale farmers to convert to certified commercial organic production. Appropriate, isiZulu print materials are seen to be a necessary and beneficial adjunct to the established interpersonal communication systems already operating between participating small-scale farmers and the intermediaries with whom they work.

## **5.2 Recommendations for improvement of the study**

The methodology could have included more participatory processes during the workshops. While the methodology drew on PAR and applied various PRA tools, greater participation within the workshops could have been attained through small group discussions to determine farmers' preferences for various printed materials. These results could have been written up by farmers, and reported on by the farmers themselves in plenary.

At the time of the invitation to the workshop, the researcher could have requested that farmers bring to the workshop printed agricultural materials in their possession. This would have allowed other farmers to see these materials, and the researcher could have gained greater insight into the quality and type of publications participating farmers use and keep.

The methodology could have included individual semi-structured interviews with key informants or decision-makers within groups. While the decision to forego such a process was made deliberately by the researcher in an attempt to "level the playing field" among literate and semi-literate participants and 'leaders' and 'followers', in retrospect such interaction could have provided more nuanced information and an opportunity to verify questions that arose out of the workshop process.

### 5.3 Implications for further research

As a result of this study, the following suggestions are made for further research related to the field of printed agricultural information materials on organic production, certification and marketing, and farmer group development:

It is recommended that research be carried out with small-scale farmer groups who are converting to or experimenting with organic production, to better understand their knowledge management systems. The aim of such research would be to understand how participating farmer groups share, access and store information and knowledge, and how best to link exogenous information into their existing knowledge systems. In addition, such research could give an indication as to what new systems need to be developed by farmer groups in their efforts to convert to organic production, and gain organic certification.

It is recommended that research be carried out on what intermediaries (who provide training on organic production, certification and marketing) perceive information needs and gaps of small-scale farmers to be. The research could be useful to develop guidelines for the production of appropriate materials for small-scale farmers to augment intermediaries' training programmes.

Pre-testing and farmer-evaluation of context-specific publications on organic production, certification and marketing is recommended, to ensure that comprehension barriers are overcome, and that the printed materials meet the identified information needs of farmers. Such research could include processes to test out participatory development and evaluation of printed materials.

Since the four participating small-scale farmer groups now all subscribe to two publications (*Learn with Echo* and *Vikela*), and have also received copies of the *Infotoons*, further research with these groups into their interactions with these materials would give greater insight into their retention, preferences and use of these printed materials over time.

Once appropriate printed materials on organic production, certification and marketing have been developed, disseminated and used by small-scale farmers, it is recommended that a study be conducted to attempt to measure the impact or at least the usage of the information by the

farmers. Field visits, to see examples of experiments carried out by farmers based on information gleaned from printed materials, would provide greater insight into how farmers apply such information and encourage participating farmers to experiment on their own plots.

This study did not investigate the link between the use of printed agricultural materials impact and empowerment of small-scale farmers. It is recommended that such a study be carried out, to gain better understanding of the importance of printed agricultural information materials to farmer group development.



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## **Appendix A:**

### **Workshop programme**

Workshop to evaluate the use of printed information by subsistence and small-scale farmers in  
KZN experimenting with and/or converting to organic farming:

Research with ..... farmers, KZN,

on ..... 2003

from .....am to .....pm.

#### Programme

1. Welcome and Prayer
2. Introductions
3. Background to research topic
4. Programme for the day
5. Semi-structured group interview and participatory activities
6. Closing

## Appendix B:

### Semi-structured group interview guiding questions

1. Where do you get information on farming?
2. Where do you go to get answers to a specific problem? (organisations/people).

Explain what printed information is.

3. What printed information have you received in the past? (not only about farming).
4. Have you ever used printed information to try out new methods in your farming? Give examples.
5. Have you ever shared printed information with other farmers? Give examples.
6. What stops you from using printed information?

Ask participants which languages they can speak, read and write. (Count how many in each category using a show of hands.)

IsiZulu

English

Speak

Read

Write

7. If you cannot read, whom do you get to read for you?

Explain to participants that for us to know the level of schooling that the farmers who attend the workshops have completed will help to produce materials in the future that will be easy to read.

Ask participants to write their age on a sticker which is to be placed on a sheet of flip chart paper. Women are given yellow stickers, men are given blue stickers. The flip chart paper is to be prepared with the following categories in the left hand column: no schooling, and then a row each for grades 1 to 12. Participants place their stickers on the flip chart paper in their own time.

Show examples of printed information (newspaper, newsletter, infotoons, poster and books):

- one at a time;
- name each type of information;
- participants work in groups of twos or threes;
- each group is given the same materials;
- in certain instances, a specific article or section will be referred to.

Participants are given time to familiarise themselves with each type of printed information material, and to discuss what they see within their groups.

#### 8. What do you like and dislike about these printed materials?

Ask participants which materials they would choose if all five of these materials were available to them. Voting is done on a sheet of flip chart paper. The five categories are marked out on the left hand side of the sheet, with space on the right hand side. In this space, each participant places a coloured paper token for their first, second and third choice of printed material. The first token, a purple triangle, represents the most preferred choice; the second token, a green circle, represents the second choice; the third token, an orange rectangle represents the third choice. The purple triangles are handed out to all participants who place these on the sheet next to their first choice of printed material. The green circles are then handed out to all participants who place these on the sheet next to their second choice of printed materials. Lastly, the orange rectangles are handed out to all participants, who place these on the sheet next to the third choice of printed materials. After each round of the paper tokens being placed on the sheet, record the results on the sheet for everyone to see. At the end of the process, encourage participants to discuss the results.

#### 9. Have you received any information on converting to organic farming methods and organic marketing?

10. If printed information on organic farming, certification and marketing was available, would you want to receive it? Why?
11. What information do you need on organic farming methods and marketing.

Ask participants whether they would like to subscribe to Learning with Echo and Vikela which are available free of charge. Get addresses of at least two group members to which Learning with Echo and Vikela can be sent. Leave copies of Vikela and Infotoons with them if they wish.

**Appendix C:**

**Results of semi-structured group interview guiding questions**

### Results of semi-structured group interview guiding questions

Questions	Comments			
	Group 1 (EFO)	Group 2 (TF)	Group 3 (VGC)	Group 4 (M)
<b>1. Where do you get information on farming from?</b>	Traditionally from parents and community members; University of Natal (Dr Modi); KZNDoA advisors; Radio; Television; Newspapers.	KZNDoA advisors; Provincial NGO working in the area; Radio; Cross visits to farming communities.	From the Permaculture Learning Centre; Learnt from family; Learn from other farmers; Learnt at school and at home; Radio – recommendations for big commercial farmers – too expensive to use as a small group.	KZNDoA advisors; Seedling nursery; Pamphlets from seedling nursery; Provincial NGO working in the area; Other farmers; Cross visits to farming communities.
<b>2. Where do you go to get answers to a specific problem?</b>	University of Natal (Dr Modi); Advisors from funding agencies; Members of the group.	Neighbours; Other farmers; “Discuss with people – there is no other way”	Permaculture Learning Centre; Where we buy seeds.	Talks to other farmers; Refers to a book on growing tomatoes which he has; Suppliers in Greytown;
<b>3. What printed information have you received in the past? (not just about farming)</b>	Children buy newspapers and bring them home; Magazines like Bona.	NGO’s newsletter; Don’t buy newspapers or magazines;	Buy magazines like Bona and Drum, but not for farming; Buy newspapers: Ilanga, Isolezwe, Daily News.	Newsletter from Ngo; Magazine on farming from chemical company; Occasionally buys magazines and newspapers; Handouts from workshops.
<b>4. Have you ever used printed information to help you try out new methods in your farming? give examples</b>	Mrs Makhanya – example of 1956 govt gazette which describes the growing seasons for a variety of vegetables – still refers to it.  Mr Mkhize – uses farming text books, as he was an agricultural teacher at primary and high school.	Mrs Dlamini – read in the NGO’s newsletter how to make insect repellent from herbs. Had not seen anyone do this before. She tried it and it worked.  Grew onions successfully with compost and garlic. The onions usually rot with chemicals.	No	No
<b>5. Have you ever shared printed</b>	Mrs Makhanya – farmers already know about	Call farmers together who are not part of the group to	No. Not confident to pass on	Yes. Share information with

### Results of semi-structured group interview guiding questions

Questions	Comments			
	Group 1 (EFO)	Group 2 (TF)	Group 3 (VGC)	Group 4 (M)
<b>information with other farmers?</b>	traditional farming. They do not need to read about it in books.	share the information in the newsletter. Visitor from Escort read Vikela, and asked to get copies for herself and other farmers	information to others because there is too little information.	neighbouring farmer about growing tomatoes; Show other farmers pamphlets on farming.
<b>6. What stops you from using printed information?</b>	Farmers already know; Unable to read; No access to literature; Bad eyesight.	Not available at Tugela Ferry; Don't have money to buy; Can't read; Materials are written in English.	Don't have access to materials; No money to buy; Prefer speaking with other farmers.	"Don't need to read about something you already know".
<b>7. If you cannot read, who do you get to read for you?</b>	Children, if the text is in isiZulu not English; Other farmers or relatives.	Children, although there is a problem if we need information when children are at school; Ask other farmers, but if they are jealous of your success, they give you incorrect information.	Children; Other farmers in the VCG.	Brother (who reads English well); Children.
<b>8. What do you like/dislike about these printed materials?</b>  -Newspaper (Learn with Echo and NuFarmer)	Easy to read isiZulu newspaper; informative;	Read stories about farming; Easy to read isiZulu newspaper.	Easy to read; Printing is big which is good; Good explanations.	Clear writing, easy to understand. "When I see the picture I become interested in the story and read about it"; Important information;



### Results of semi-structured group interview guiding questions

Questions	Comments			
	Group 1 (EFO)	Group 2 (TF)	Group 3 (VGC)	Group 4 (M)
<b>-Newsletter (Vikela)</b>	Big writing. I can see what is happening – not like my Bible which I can't read anymore"; Can understand because it is written in isiZulu. "I liked reading the articles on how to do things".	I like reading stories in isiZulu. The stories remind us of what our parents used to do. Bigger writing is better. Can't see small writing - don't want to read it.	Good information; Can keep it because it is like a book. We can refer back to it. It has good pictures; Interesting because it tells what farmers are doing in other places; One farmers said "I liked reading about Tugela Ferry because that was where I was born"; "It gives new ideas about what we can do in our own garden"; It is easy to find what you are looking for.	Covers a lot of information; Tells what other farmers are doing; Drawings are clear to see; Mr Sithole: "The article on compost making reminds me of how my father made compost when I was a young boy"; I like reading about people that I know;
<b>-Infotoons</b>	I can follow the pictures; Pictures are more important than writing; Can add own information; Shows how to do things;	Easy to understand the pictures; Pictures tell the whole story, even if you can't read. Pictures are good.	The pictures show how to do things which is good; Like the measurements – you can get someone from the group to help you read them; Lots of new information.	It is difficult to find what something; Like the pictures; It is helpful, but needs more writing to fully understand; Step-by-step is good.
<b>-Poster (Landcare)</b>	No explanations, so not clear what the message is; Would like writing; Can see individual things;	Described the two different pictures, and interpreted the "no care" drawing as people who are lazy. (see comments at end)	Shows the difference between "protected" and "unprotected" areas. Shows that if you don't plant trees the land becomes eroded. Shows that it is important to make a dam.	The first picture shows the land not taken care of and the second picture shows the land properly looked after.
<b>-Books (The Farmers workbook and The Peoples</b>	In English – it would be better in isiZulu; One farmer said "I wish I had a book like this when I was	Struggled to read small print. Lots of information and pictures.	No difference between information in books and magazines; The book is too big – lose	Everything about farming is in the book; Full of good information; English is difficult to read.

### Results of semi-structured group interview guiding questions

Questions	Comments			
	Group 1 (EFO)	Group 2 (TF)	Group 3 (VGC)	Group 4 (M)
Workbook)	younger – I need it. It can help a lot”. It looks very useful.		concentration with so much information; You have to have time to find the information – you will have to read it every night until you know where to find the information. A lot of information and details. Will need to find someone who can read it and understand it, who can then tell others.	The pictures on their own are not enough to understand; Mr Sithole: “If the book is in isiZulu I could read it myself”.
9. Have you received any printed information on converting to organic farming methods, and organic marketing?	No. Attended training workshops. Only internal inspectors received notes from their training, but these were in English and not referred to.	Only from the NGO.	Yes, from the Permaculture Learning Centre, when members attended a training course.	No. Have attended workshops at Valley Trust, and visited Organic packhouse. NGO has done experiments with us.
10. If printed information on organic farming, certification and marketing was available, would you want to receive it? Why?	Yes. Because it would help us to become more independent.	Yes. We are still experimenting. Need more information. We have not sold any organic produce yet.	Yes. Because if we forget something we can refer back to written books; Can't go wrong because you can follow the book; If someone wasn't present at the training, you can share the written information with them afterwards.	Yes. Organic farming is cheaper because you don't need chemicals; The vegetable are healthy. There are problems with markets. Concerned about whether people will buy organic produce because it looks and tastes different to conventionally grown crops.

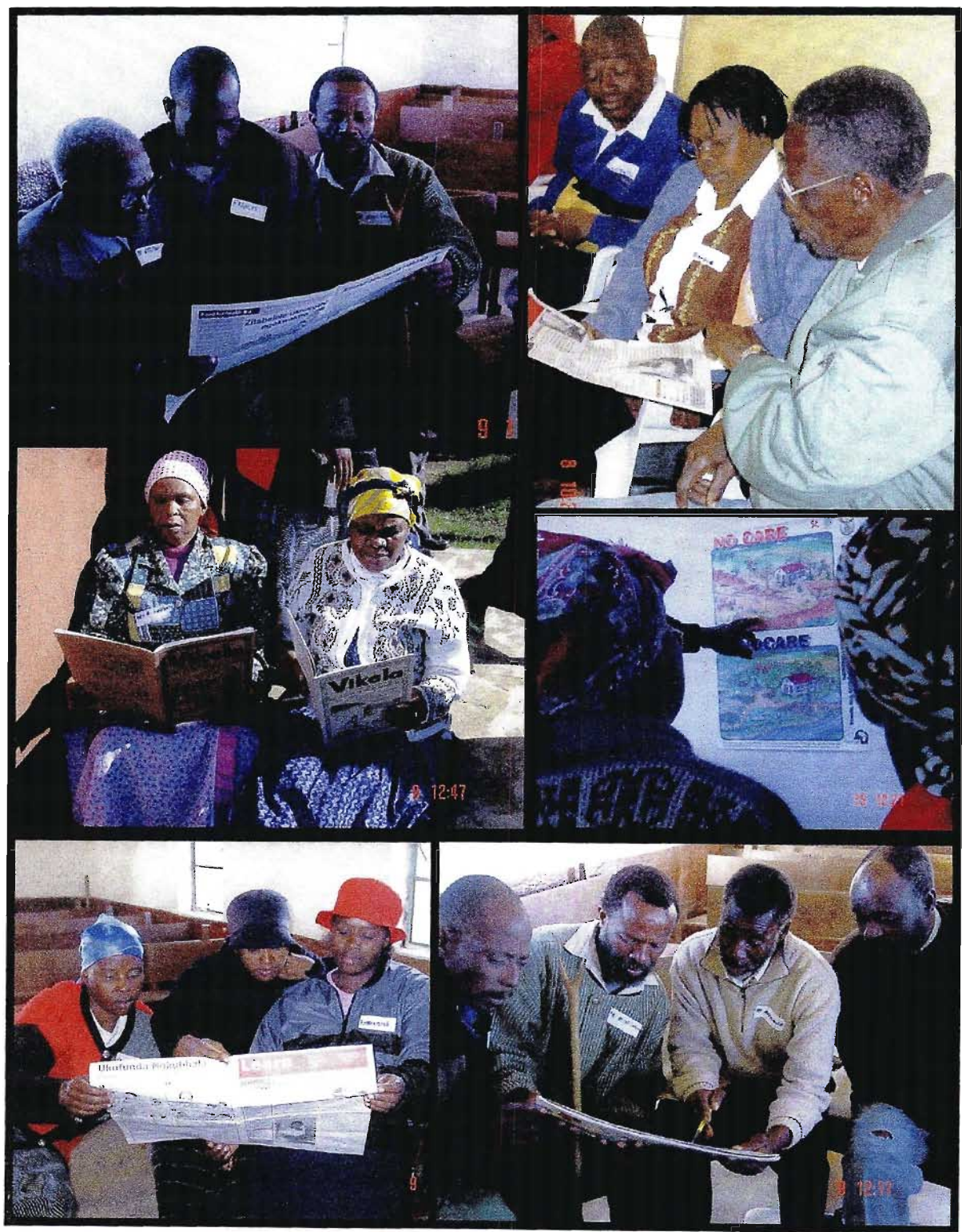
### Results of semi-structured group interview guiding questions

Questions	Comments			
	Group 1 (EFO)	Group 2 (TF)	Group 3 (VGC)	Group 4 (M)
<b>11. What information do you need on organic farming methods and marketing?</b>	Available markets; Types of produce; Sources of funding; Bookkeeping and finances; Fighting pests without chemicals;	Markets; Certification; Soil testing to do oneself.	Organic pesticides and insecticides, to deal with ants, cutworm and moles. Information on marketing and certification.	Markets; Farming without chemicals; Certification.
<b>General comments on written materials</b>	<ul style="list-style-type: none"> <li>Farmers were very keen to get copies of the books and infotoons. One farmer expressed a desire to get the newspaper as soon as he started reading it.</li> <li>Those with tertiary education want the books because they contain more comprehensive information.</li> <li>At the end of the workshop the farmer who that they don't need to read about traditional farming, clarified her comment by saying "We know about growing traditional crops, but we need information on new methods of farming and marketing."</li> </ul>	<ul style="list-style-type: none"> <li>Farmers want printed information because they can go back to read it again. As one farmer said, "you can forget what you are told".</li> <li>Another farmer said that printed materials can be passed on to children, "even if you are dead".</li> <li>Don't like small pamphlets, leaflets and booklets because these can get lost.</li> <li>Prefer lots of information on different topics in one book..</li> <li>On the poster, a pipe running from the dam to the river was identified as a worm by one group. This shows that people may struggle with perspective and dimensions in drawings.</li> </ul>	<ul style="list-style-type: none"> <li>These farmers really enjoyed reading about what farmers are doing in other parts of KZN.</li> </ul>	

## **Appendix D**

**Photographs of participating small-scale farmers  
perusing the printed agricultural information materials**

Appendix D: Photographs of participating small-scale farmers perusing the printed agricultural information materials



## **Appendix E:**

### **Printed materials introduced in the workshop**



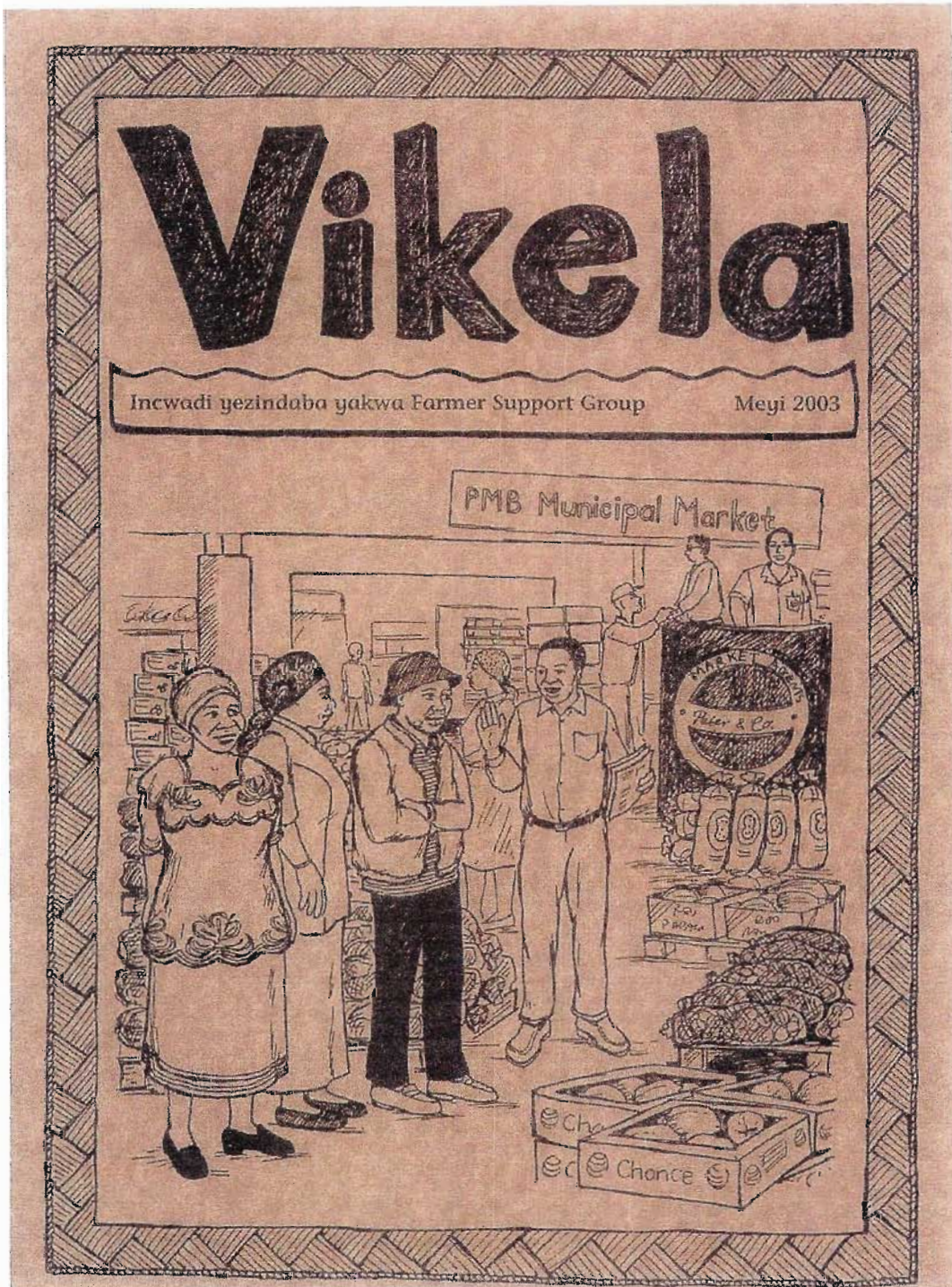
## Newspaper



*“Learn with ECHO” insert in the Echo supplement, distributed inside The Witness (The Witness 2003).*



## Newsletter



The cover of *Vikela* newsletter (Farmer Support Group 2003)



## Ukwaziswa kwezindlela zokulima zamanje

### Ukwemboza

- kugcina umhlabathi umanzi;
- kukhubaza ukhula ekutheni likhule;
- kuvikela umhlabathi elangeni elishisayo;
- kuvikela umhlabathi ekugugulekeni njengoba ingaphezulu lomhlabathi lembozekile;
- kwandisa ukudla emhlabathini ngenkathi isembozo sihlephuka noma sibola.



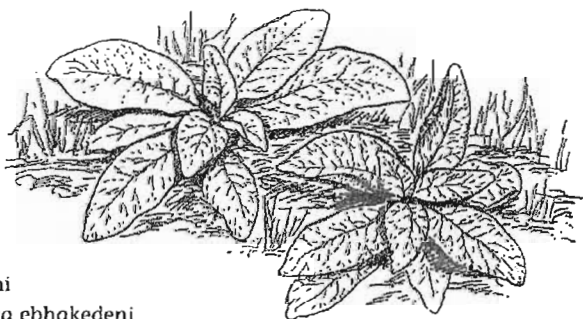
Ukwembozwa komhlabathi kungenziwa ngalokhu:

- Izinhlanga zommbila
- Amahlamvu omisiwe noma utshani
- Amagxolo kanye nemvili yamapulangwe asahwayo.
- Amaphepha noma amakhalibhothi

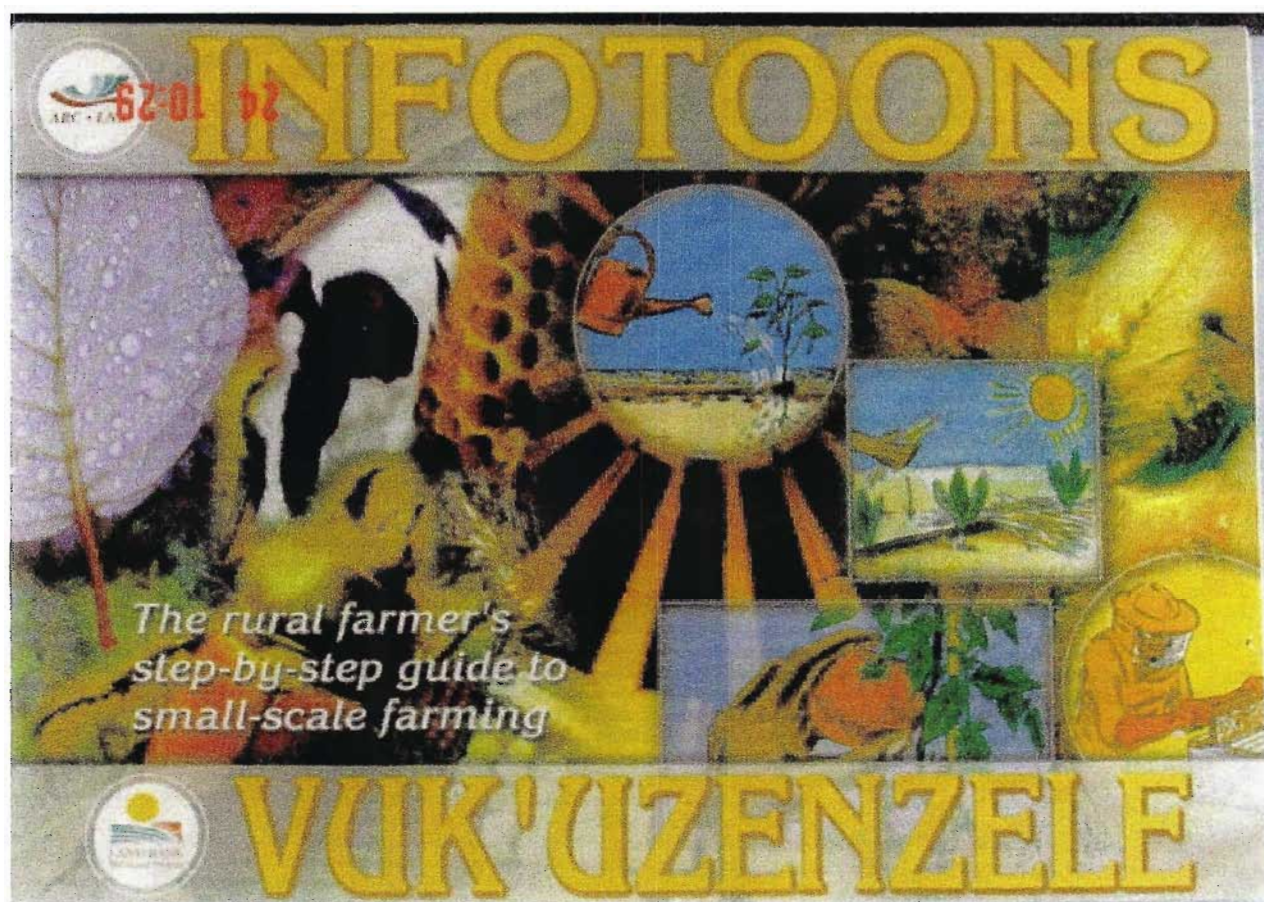
*Izihlahla zikamatasi zembozwe ngoishani obomile.*

**Isitshalo icomfrey esitshalwe kumtata wase Msinga.** U-FSG wazisa ngalesi sitshalo kubalimi ngoba siyaziwa ekwenzeni izitshalo zibe nempilo. Okunika amandla okukhethiweyo okulethwa ilesi sitshalo i-comfrey umsoco okuthiwa i-nitrogen. Umquba owamanzi ungenziwa ngecomfrey. Lena indlela yokwenza umquba owamanzi:

1. nqamula amahlamvu esitshalo abe mancane kahle
2. wafake lamahlamvu ebhakedeni elinamanzi
3. wacwilise izinsukwana aze abe samanzi/uketshezi
4. kucwenge
5. chelela isiqu sesihlahla (uma ungenalo ibhodlela lokufutha, ungachelela usebenzise izandla zakho)
6. amahlamvu asalile ngesikhathi ucwenga angabuyiselwa emuva ebhakedeni ufake namahlamvu amasha ukuze kuqalwe kabusha.



## Step-by-step Manual



The cover of the *Infotoons* manual  
(Agricultural Research Council and the Landbank, undated)

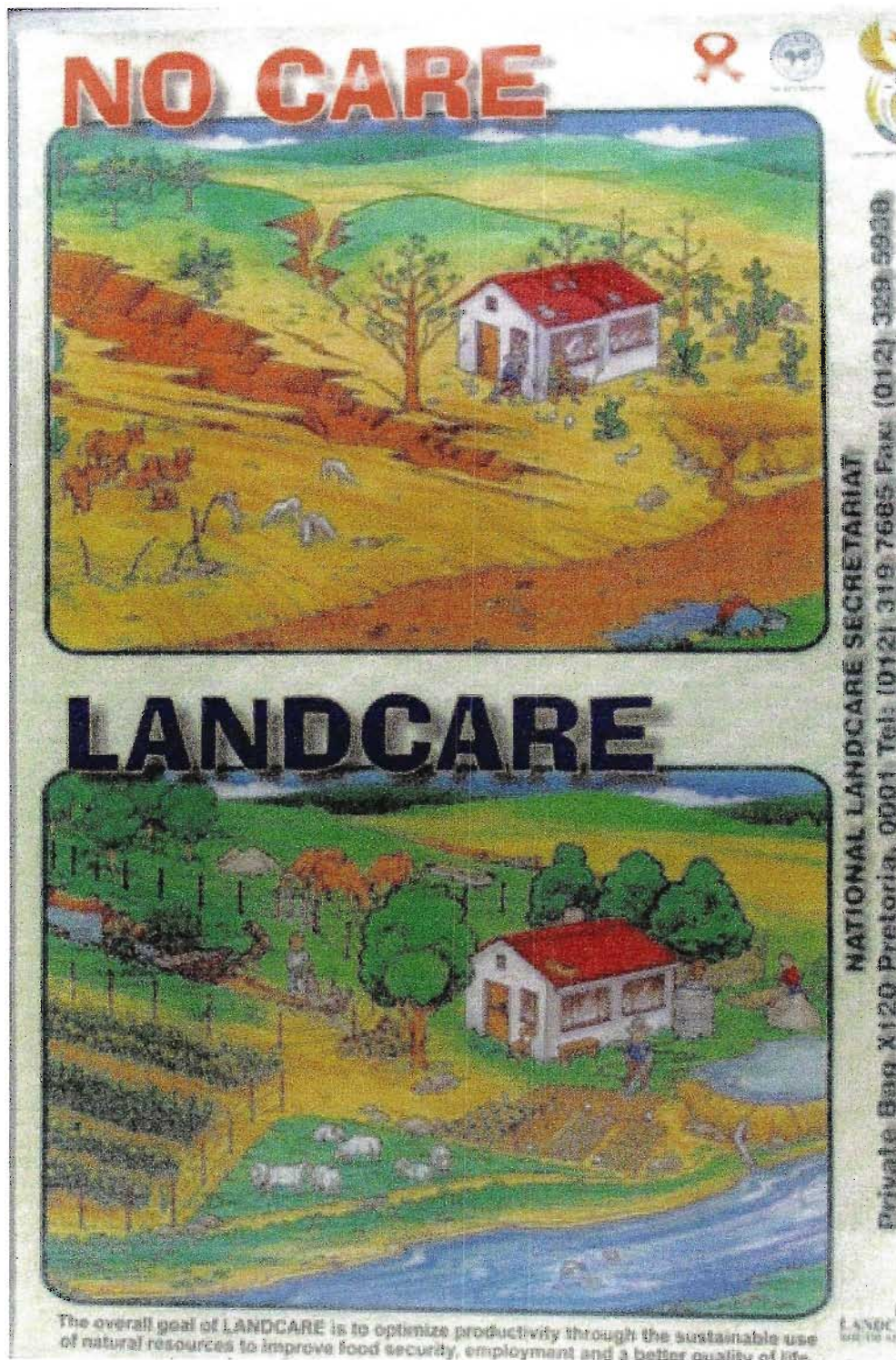




Detail of one of the pages of the *Infotoons* manual  
(Agricultural Research Council and the Landbank, undated)

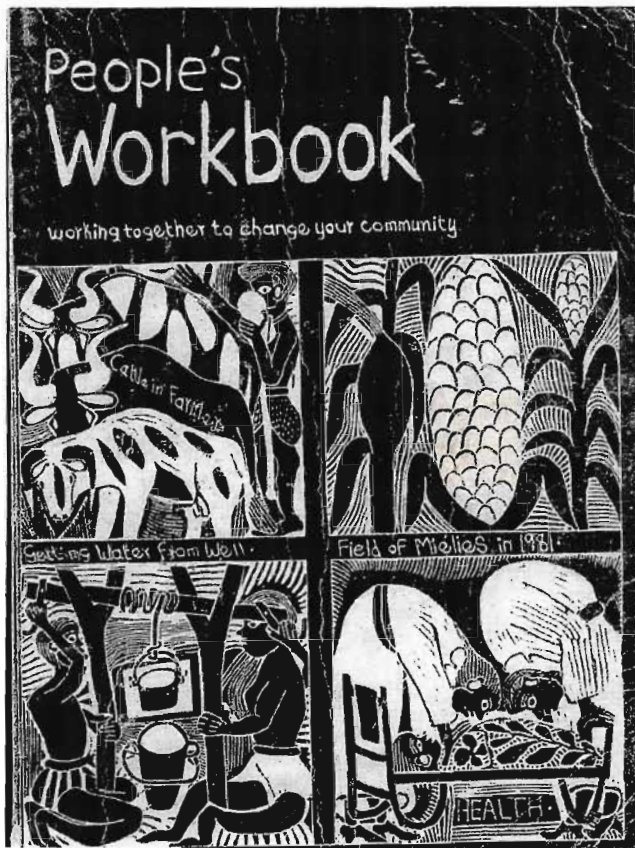


# Poster

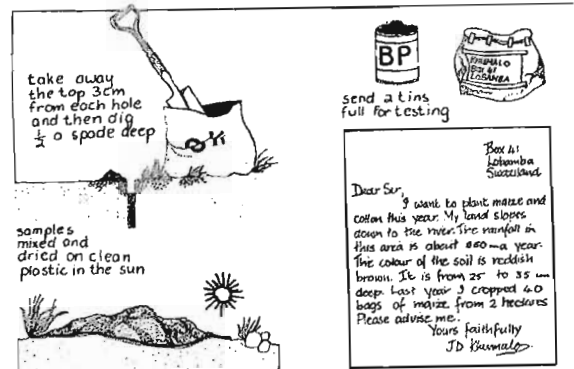


*Landcare Poster*  
(National Landcare Secretariat undated)

## Books



*People's Workbook*  
(EDA 1980)



When you have collected soil from the 30 holes, mix it all well together breaking all the lumps. Then leave the soil in the sun on clean plastic or sacks to dry for about 7 days. Put about 1kg of this soil (2x500g oil tins full) in a clean plastic bag. Send it to be tested by the government agricultural department or by a fertilizer company (see p 121). In your letter tell them how much rain falls in your area, what crops you want to grow, how deep the soil is, what colour it is, and if your land is flat or on a hill. The people who do the tests will tell you what kind of fertilizer to use, and how much. You do not have to put on as much as they recommend. Use about 2/3 of what they recommend. If you get good results, you can use the full recommendation.

Most soils in Southern Africa are short of phosphorous. It is cheaper to put on phosphorous (superphosphate or rock phosphate) than mixed fertilizers like 2:3:2.

All soils can be improved by crop rotation and by adding lots of kral manure and compost. Ploughing in lots of grass, mealie stalks and other plants is also good for the soil.

**Soil Acidity**  
In places where there is a lot of rain, plant foods like calcium, magnesium and potassium are washed out of the soil and it becomes very acid. Crops can not grow well in very acid soils.

Soil acidity is measured in pH numbers. If the pH is less than 7, the soil is acid. If it is higher than 7, it is alkaline. If the pH is exactly 7, the soil is neutral - not acid or alkaline. Most crops prefer slightly acid soils with a pH of 6.5 to 6.8. A few crops, like potatoes like more acid soils, with a pH of 6. If soil has a pH below 4, it will be impossible to grow good crops without putting on lime.

Cabbages	grow in pH between 5.0 and 6.0
Tomatoes	grow in pH between 5.5 to 7.0
Carrots	grow in pH between 5.5 to 6.0
Onions	grow in pH between 6.0 to 7.0
Maize	grows in pH between 5.5 to 7.5
Groundnuts	grow in pH between 5.3 to 7.5
Cotton	grows in pH between 5.0 to 6.0
Tobacco	grows in pH between 5.5 to 7.5
Wheat	grows in pH between 6.0 to 7.5

Detail of a page from the  
*People's Workbook*  
(EDA 1980)



# PEOPLE'S FARMING WORKBOOK



## People's Farming Workbook (EDAT 1995)

close to the vegetables. Use the weeds to make compost or mulch.

Many people like to eat some wild plants – wild spinach or *tepe*, or *imifino*, for example. You can let these plants grow between the vegetable rows. You can then pick and eat the young leaves of the wild plants, pull out the roots and stems, and leave them on the soil as mulch.

### CROP ROTATION

Farmers talk about four families of vegetables:



- **Root crops** – carrots, beetroots, onions, radishes, turnips.
- **Leaf crops** – cabbages, cauliflowers, spinach, broccoli.
- **Legumes** – beans, peas.
- **Fruit crops** – tomatoes, potatoes, green or red peppers, egg plants, chillies.

Farmers often grow vegetables from different families in different plots each year. They call this crop rotation. You

may think that it is complicated, but here are two good reasons why you should try it.

1. Some families of vegetables – like fruit crops and leaf crops – take a lot of food out of the soil. If you dig in the plants left over from harvesting, some vegetables – like the legume family – help put some plant food (like nitrogen) back in the soil. So you can improve the soil by planting legumes after fruit and leaf crops.

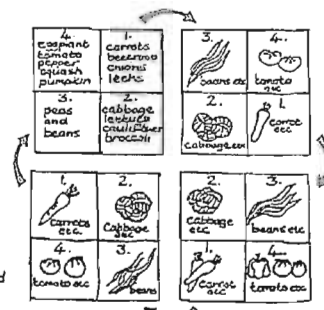
2. If you grow vegetables that belong to the same family (like fruit crops) in the same soil every year, they will be at-

tacked by the same pests and diseases (like Bacterial Wilt and Rootknot Worm). So rotating crops helps to prevent pests and diseases.

In the rotation shown below, the legumes (beans, peas, and so on) follow the fruit crops (tomatoes, peppers, and so on). This is because the leaf crops need a lot of manure, but the root crops do not need fresh manure. (Root crops grow

a simple rotation :

divide your garden  
into 4 equal parts



the next time you plant,  
move each family of  
vegetables to the next bed

Detail of a page from  
the *People's Farming  
Workbook*  
(EDAT 1995)

Participants	Group	Age	Male/Female	Grade Completed
E1	1	60	f	0
E2	1	70	m	0
E3	1	48	m	2
E4	1	72	f	3
E5	1	59	f	3
E6	1	48	f	3
E7	1	65	f	3
E8	1	35	f	4
E9	1	19	f	4
E10	1	63	m	4
E11	1	39	f	5
E12	1	58	m	6
E13	1	25	f	7
E14	1	25	f	10
E15	1	43	m	11
E16	1	73	m	11
E17	1	51	f	12*
E18	1	50	m	12*
TF19	2	41	f	0
TF20	2	32	f	0
TF21	2	42	f	0
TF22	2	42	f	0
TF23	2	49	f	0
TF24	2	44	f	0
TF25	2	57	f	0
TF26	2	40	m	2
TF27	2	54	f	3
TF28	2	38	f	3
TF29	2	54	f	3
TF30	2	50	f	7
TF31	2	56	m	8
VGC32	3	61	f	0
VGC33	3	62	f	0
VGC34	3	58	f	0
VGC35	3	73	f	0
VGC36	3	47	f	2
VGC37	3	58	m	4
VGC38	3	66	f	6
VGC39	3	64	m	7
VGC40	3	45	f	8
VGC41	3	72	m	9
VGC42	3	46	f	9
VGC43	3	49	f	10
VGC44	3	49	m	10
M45	3	51	f	10
M46	3	53	m	5

Notes:

\* Tertiary degree obtained

Appendix G: English and isiZulu language ability of participating farmers, Umbumbulu 9 June 2003, Tugela Ferry 25 June 2003, KwaMashu 8 July 2003, Muden 10 July 2003, (n=46).

	EFO*	TF	VGC	M	Totals	%
IsiZulu						
Speak	18	13	13	2	46	
Read	16	5	13	2	36	
Write	15	5	13	2	35	
English						
Speak	7	2	7	2	18	
Read	4	1	5	2	12	
Write	4	1	5	1	11	

Notes        \* I Sotho speaker



Appendix H: Participating farmers preferences for printed materials. Umbumbulu 9 June 2003, Tugela Ferry 25 June 2003, KwaMashu 8 July 2003, Muden 10 July 2003.

Farmers first choice of printed materials. (n=46)

	E1	TF1	VGC1	M1	1st
Newspaper	0	3	0	0	3
Poster	0	0	1	1	2
Newsletter	10	6	9	0	25
Infotoons	6	4	3	0	13
Books	2	0	0	1	3

Farmers second choice of printed materials. (n=28)

	E2	TF2	VGC2	M2	2nd
Newspaper	0	1	0	0	1
Poster	0	0	7	0	7
Newsletter	0	4	4	0	8
Infotoons	0	6	2	2	10
Books	0	2	0	0	2

Farmers third choice of printed materials. (n=28)

	E3	TF3	VGC3	M3	3rd
Newspaper	0	2	0	0	2
Poster	0	1	5	0	6
Newsletter	0	1	2	2	5
Infotoons	0	2	6	0	8
Books	0	7	0	0	7

Farmers first, second and third choices of printed materials

	1st	2nd	3rd	Total
Newspaper	3	1	2	6
Poster	2	7	6	15
Newsletter	25	8	5	38
Infotoons	13	10	8	31
Books	3	2	7	12
Total farmers	46	28	28	