

## Chapter 2: Information needs

### 2.1 Introduction

The target audience chosen for this web site is small and medium scale farmers with surplus milk on the farm, which they can process themselves. The web site should give information on making a variety of yoghurt types and provide all information needed for this purpose. It should also be useful to Agrelek advisers who work closely with farmers in planning new ventures. The availability of the information on a CD-ROM, should also make this information available on a wider front if required.

In order to establish specific needs, information and information seeking behaviour as well as models that can be used to explain the information seeking behaviour of different user groups, were considered as a basis for designing a web site as a source of information for dairy farmers. Types of needs were identified, and applied to a framework for assessing information needs.

### 2.2 Information behaviour

Information behaviour is described by Wilson (1999:259) as:

- the identification of a need for information;
- the search for information; and
- using that information.

A user should therefore become aware that there is a gap in his knowledge that can be filled by obtaining appropriate information. The next step entails finding this

information. Knowledge is acquired when relevant information is obtained and applied to fill the experienced need.

### **2.2.1 Information seeking behaviour**

Information seeking behaviour can be seen as the actual process of identifying and obtaining the information itself. It varies considerably from one user group to another. People needing information have different approaches when seeking information. Researchers in the natural sciences use completely different methods than those in the social sciences. Novices use different methods than experts (Wilson, 1999:251).

Identification, analysis and coordination of the information needs of users are essential for the planning, implementation and operation of information systems and networks (Prasad et al., 1992:42; Kunz et al., 1976:9). In the design of an information tool, the information seeking behaviour of the target group should be known. In the case of this study the target audience is farmers, who should mostly be novices, and also advisers to farmers, who are experts on the use of electricity, but not necessarily on processing of raw materials. There should therefore not be many differences in their information seeking behaviour.

### **2.2.2 Application of models of information seeking behaviour to South African dairy farmers**

An information behaviour model can be described as a framework for thinking about a problem and may evolve into a statement of the relationships among theoretical propositions (Wilson, 1999:250). Various models exist, such as those of Wilson, Dervins, Ellis, Kuhltau, Saracevic, Ingwersen, Belkin and Spink (Wilson, 1999:252-262).

The above models focus on:

- behaviours associated with information seeking behaviour; and
- a broader perspective of the information search as opposed to only the use of computer-based information retrieval systems (Wilson, 1999:258).

These models are often used in the design and development of information retrieval systems. The ideal situation would be if a system could be designed to reduce the risk of failure by the user, and simultaneously increase the users' sense of self-efficacy (Wilson, 1999:258).

The first model discussed and adapted for use in the design of the web site focusses on the relationship between the information seeker, and the channels of communication. The second model focusses on the progress from problem identification to problem resolution.

#### **2.2.2.1 *An information seeking and communication model***

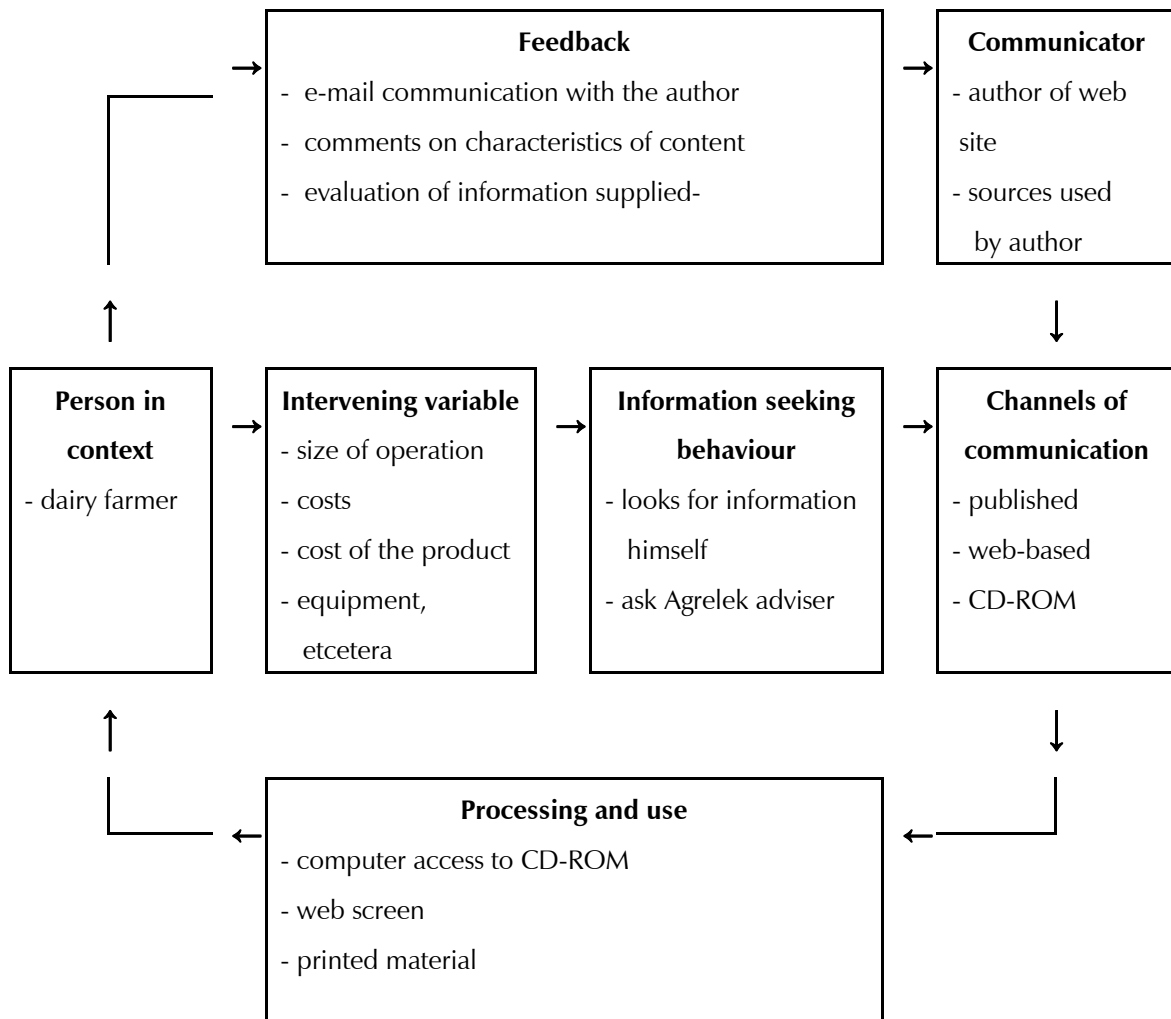
The focus of this model is on the seeker of known or unknown information. There is also a strong focus on the communicator and the channels of communication. This model shows the general relationship between communication and information seeking behaviour. The communicator as the originator of the message is linked by channels of communication to the person needing the information. There is a feedback loop, through which the communicator learns of the user's response to the communication (Wilson, 1999:264)

This model helps to identify relationships in the information seeking process, which can easily be overlooked and ignored. It is important to realise that the study of some particular topic needs to be done in the context of the surrounding field (Wilson, 1999:264). Information searching should be explored with an understanding of

information seeking, and the latter with an understanding of general information behaviour of a particular group (Wilson, 1999:264).

If this model is applied to dairy farmers (figure 2.1) it gives an indication of the information needs of farmers within the context of farming. All aspects covered, especially feedback, should be taken into consideration when developing a web site to meet the needs of these farmers. It is apparent that not only the information seeking behaviour and the subsequent information needs should be addressed, but it should be treated as a comprehensive package, addressing all aspect such as: the specific needs of the farmer (small, medium or large scale; equipment, costs, marketing, and others), information to be included, availability of the information, and feedback.

**Figure 2.1 Relationship between information seeking behaviour and communication of dairy farmers (adapted from Wilson, 1999:264)**

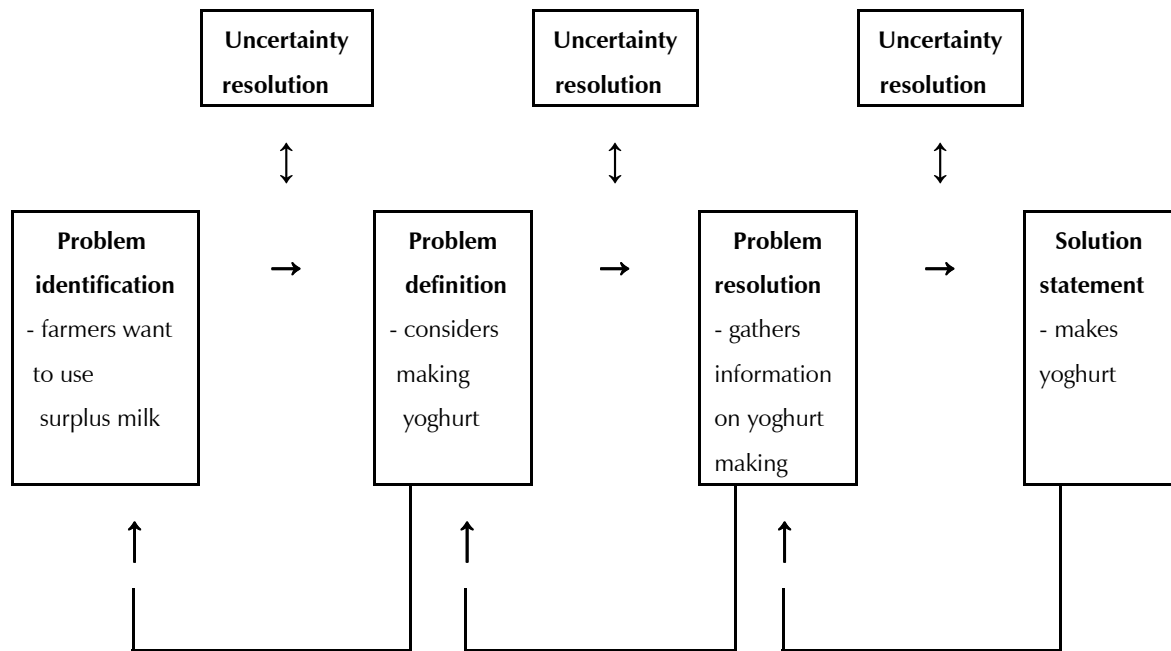


### 2.2.2.2 *Problem solving as a basis for information seeking and the searching process*

The transition from problem identification to solution is not a simple and straightforward process (Wilson, 1999:265). The farmer wants to solve the problem (what to do) and resolves the problems associated with this problem (how). It involves a change from uncertainty (no information) to certainty (appropriate information)

which then becomes a goal. During this transition from uncertainty to certainty (problem resolution) there are identifiable and recognized stages (Figure 2).

**Figure 2.2 A problem solving approach of dairy farmers in the information seeking and searching process (adapted from Wilson, 1999:266)**



It can be concluded that each stage or step in this process, shows the successive resolution of more and more uncertainty, and should this fail, the feedback loop to the previous stage should be taken to try and resolve the problem (Wilson, 1999:266).

Study of this model indicates the necessity for the development of an interactive web site. It ensures that a user can return to a previous stage to try other possibilities, when uncertainty about a solution is experienced. It however does not allow feedback to the author, a stage that is essential to improvement of the web site.

In the development of any information source, it is essential to know the target audience, to know their characteristics, information seeking behaviour and their information needs.

### 2.3 Information needs

Debons, as quoted by Kaniki (1992:83), describes a need from a physiological approach, where a need is a state-of-lacking which causes an imbalance in homeostasis (a relative stable equilibrium between elements). This can be removed or reduced by providing information on whatever the need may be.

An information need can, when seen in the context of information seeking behaviour, be defined as:

- patterns or paths pursued by an individual in an attempt to resolve a need;
- or
- a state of lack of desirable requisite(s) or commodities (information) (Kaniki, 1992:84).

Information needs should be understood and anticipated in order to provide appropriate and applicable information (Kaniki, 1992:88). Information needs relate to:

- what information is needed;
- what can be done to satisfy the need;
- on what level should information be provided; and
- how much detail should be given (Kaniki, 1992:84; Nicholas, 1996:12; Prasad, 1992:6-8; Wilson, 1999:252-262).

Information needs are highly personal and depend on the level of education of the user, the ability to verbalise requests, the willingness to learn, and what is most important, the predisposition to use the information. Criteria for assessing user needs should be established. The data collection methods used to determine the needs of the user have to be effective, reliable and robust (Kunz et al., 1976:9; Nicholas, 1996:4). It is important to determine and evaluate the information needs of a specific group when making a decision about what information should be included or supplied to meet the unique needs of those users (Heckel, 1982:23-26; Kaniki, 1992:84; Kaufman, 1988:21; Klair et al., 1998:3; Kunz et al., 1976:9; Main, 1993:51-60; Nicholas, 1996:2).

### 2.3.1 Kinds of information needs

Information needs can evolve from one of the three basic human needs, which are:

- ***physiological needs***, which include the need for food and shelter;
- ***psychological needs***, which include the need for security and domination; and
- ***cognitive needs***, which include the need to plan and learn a skill (De Jong & Sarti, 1994:1; Nicholas, 1996:7; Klair et al., 1998:1).

Information needs can also be divided into dormant needs, and unexpressed needs:

- ***dormant needs manifest:***
  - when people are not aware of what they need (Nicholas, 1996:8; Prasad, 1992:1); and
  - when people are unaware of “new” information available which could help and assist them (Nicholas, 1996:8).

Exposure to information, can then lead to an awareness of its worth (Kunz et al., 1976:9; Nicholas, 1996:8).



- ***unexpressed needs are apparent:***
  - when people are aware of needs but do nothing to express this need (cannot or will not) (Nicholas, 1996:8).

When developing an information tool, the abovementioned needs should be anticipated if possible. This can be attempted by making deductions from available information on the information seeking behaviour and the attitude to information of a prospective target group.

### **2.3.2 Obstacles to meeting information needs**

There are various obstacles getting in the way of successfully using information. A person experiencing uncertainty does not recognize his specific need, especially if it is intangible. Because he is unable to specify what he really needs, he is unable to find a way to satisfy this need (Nicholas, 1996:7, 13; Prasad, 1992:15).

There are a number of factors playing a role in successfully meeting information needs. These factors include:

- ***Factors relating to personality:***
  - persistence, willingness to continue and try again if success is not achieved immediately;
  - thoroughness, to search deeply and painstakingly;
  - orderliness, by searching systematically;
  - motivation, leading to commitment, to persist; and
  - receptiveness, which is the willingness to accept information from other sources (Nicholas, 1996:38).

- ***Factors relating to time:***
  - a lack of sufficient time to obtain and digest information in the time allotted for the task (Nicholas, 1996:38).
  
- ***Factors relating to access:***
  - even if someone knows about the existence of information, it might be difficult to obtain;
  - distance from places where information can be obtained;
  - format and language in which information is available; and
  - people use what is easiest to get and closest to hand, and not what is actually the best or most appropriate (Nicholas, 1996:38).
  
- ***Factors relating to the lack of resources and excessive costs:***
  - Internet access and on-line uses of information systems are costly (Nicholas, 1996:38).
  
- ***Factors relating to information overload:***
  - the amount of information can be overpowering. It needs to be evaluated and only the best selected (Nicholas, 1996:38).

When developing an information resource for a specific target group, the influence of the abovementioned factors on information seeking behaviour and the successful use of information should be taken into consideration. It should ensure that the information resource contains appropriate information. The transfer of this information to the user should fit in with his personality traits and should be affordable and accessible to as many people as possible.

## 2.4 Information needs of South African dairy farmers

When embarking on a new venture, many problems emerge of which the farmer has no knowledge. Before a decision can be made on which product to select, he needs general information on, for example, marketing possibilities and credit available. He also needs more specific information on the actual processes, equipment required and legal requirements (Ozowa, 1995:1).

Information for large scale processing is available for use in factories. It can however seldom be applied to small to medium scale processing as required by farmers (Collaboration, 1999:11; Jordaan, 1999:40; Lagrange, 1995:2; Small-scale, 1999:10).

### 2.4.1 Levels of information needed

According to Van Niekerk (1993:19), three distinct levels of agricultural information can be identified:

- ***the scientific level:*** providing information on an international level;
- ***the extension level:*** providing information of national importance; and
- ***the level of trade and industry:*** providing information from agribusiness to their markets

Farmers considering processing raw materials themselves, need to take limited note of scientific level, but need to know about information on an extension level and also on the level of trade and industry.

## 2.4.2 Information needs of groups in the agricultural sector

The agricultural community consists of a variety of groups, each with different needs. These groups are, among other: researchers, educators, government personnel, agricultural associations, agricultural economists, exporters, journalists, bankers, consultants, agricultural librarians and information providers, nutritionists, food scientists and technologists, home economists, farmers, and persons involved in agribusiness (Table 2.1) (Frank, 1987:297). Needs experienced by these groups are diverse and clearly show the different levels of the information needs of each group. The needs of each group are illustrated in the following table:

**Table 2.3 Information needs of various agricultural users as identified by Frank, (1987:299-300)**

<b>User population</b>	<b>Information needs</b>
Policy makers / administrators (government and private industry)	Production levels, use of resources, market outlook, state and national outlook (perishable information)
Research scientists; information providers, all segments of agriculture	Research - past, present and future; rapid access to latest findings
Diagnostic, analytical and Industrial scientists and economists	Immediate access to details of new standards, techniques and procedures, patents and product details, trade information, market intelligence and outlook statements
Specialist advisers	Similar to needs of researchers - new developments, and who is doing what, where and when
General advisers: extension personnel, home economists, journalists	Practical information, factual information, current practices, up-to-date information
Educators and students	Current practices and issues, computer literacy and experience in accessing databases
Agricultural service industries - banks, feed and fertilizer suppliers, associations, produce brokers, chemical companies, exporters, economists, etcetera	Market trends, production estimates, prospects for agricultural industries, research results; new practices and government policy; rapid access to new information, data analysis and interpretation
Consumers (farmers, ranchers and rural residents) and general public	Integrated technical and economical information to enable decision making; production, marketing and consumption information, information to manage lives and cope with everyday problems and realise opportunities

It is clear from the above that no single information source can meet all the listed needs. To be effective, the source should be aimed at a specific target group and its particular needs.

### **2.4.3 Aspects on which information is needed**

Although agricultural information is available, it is often not readily obtainable or in suitable format for all target groups.

The factors influencing South African agriculture and the dairy industry (par 1.2 and 1.3) form the background to decisions farmers have to take and on which they need information. The following are more specific aspects on which farmers need information:

#### **2.4.3.1 Utilization of information**

Farmers are often not even aware where information on specific issues can be found. They are also, not aware of the value of information and how it can contribute to success (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992:1-2).

#### **2.4.3.2 Strategic positioning**

Farmers have to know how to position themselves strategically. Profit margins are narrow and farmers need to farm more efficiently and also increase the volume of their business. The farmer has to be able to recognize the strengths and weaknesses of his business. He should be able to evaluate all factors which will determine the future direction his business should take (Kaniki, 1992:85; Klair et al., 1998:2; Letshela, 1999:4; Ozowa, 1992:1-2).

It is important to keep up with national and international trends. The competitiveness of the enterprise should also be determined. Accountability of producers, especially environmental accountability is regarded as essential. To achieve this, extension education informs farmers about issues such as using lower levels of chemicals and alternative farming methods to protect the environment (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992:1-2).

#### **2.4.3.3 *Financial considerations***

It takes money to make money. Farmers have to plan carefully to make sure that they can remain in business. Information on monetary issues is needed. Possible sources of loans, including names of lenders, and the location and types of existing credit sources should also be available. The terms of loans such as interest rates, loanable amount and mode of repayment as well as tax implications are also important (Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Ozowa, 1992:1-2).

#### **2.4.3.4 *Management***

Management is a very important factor in any business venture. Farmers should have information on management options for farmers as well as be able to evaluate his own management capabilities (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992:1-2).

#### **2.4.3.5 *Choice of products***

Information on which commodities for which there is a demand and what the preference of consumers are, is also invaluable in the choice of products. Some products might also sell better at certain times of the year in and in certain

communities (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992:1-2).

#### **2.4.3.6 Planning production**

Production should be planned in conjunction with seasonal changes that might occur. If a product is to be successful, it should be made from the best possible ingredients. Information on forecasts of market trends is needed as well as on estimated electricity, water and other necessary requirements, and ways in which production costs can be reduced (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992:1-2).

The evaluation of new developments and new technologies which might improve production is also necessary to be able to make informed decisions. New technologies are expensive and might still be unproven. It can however contribute significantly to make production more cost effective (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992:1-2).

#### **2.4.3.7 Legal considerations**

Information on legislation affecting, not only the product itself, but also the production environment, such as factory construction, as well as the workers employed, their working conditions, minimum wages and safety should be available. Before any product is offered for sale, it should conform to all legal requirements. If regulations are not adhered to, producers can face legal proceedings against them (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992:1-2).



#### **2.4.3.8 Quality and safety**

Information on food quality and safety and ways of ensuring that no contamination or deterioration of products occur is essential for the success of any enterprise. Good quality is the best advertisement and can ensure the success of a product. Food safety, aimed at protecting consumers is also very important. It is essential that products are labelled correctly and that all sanitary requirements are met (Klair et al.,1998:1-3, 8-11; Letshela, 1999:4).

#### **2.4.3.9 Pricing**

Information on current prices of similar products is needed to ensure competitiveness in the market. If production costs are too high, it will not be cost effective to make a particular product. Information on the calculation of prices is also needed to ensure that a profit can be made (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992: 1-2).

#### **2.4.3.10 Marketing**

Information on sales timing assists farmers in ensuring that they market their products at the best possible time, when the demand is high. This information enables them to stagger harvesting and quantity, ensuring profit. Information on marketing practices includes information on improved harvesting methods ensuring that raw materials are not spoiled or contaminated before processing. It also results in better quality products (Klair et al.,1998:1-3, 8-11).

Information on group marketing, can enable small scale farmers to have organised sales of marketable surplus and bulk transport of produce either alone, or in

relationships with partners (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992:1-2).

#### **2.4.3.11 Evaluation**

To ensure quality, safety and cost-effectiveness it is essential to monitor processes and products on an ongoing basis. Information on performance monitoring, the frequency of monitoring and the ability to make quick adjustments should be available (Baldwin, 1999:2-3; Kaniki, 1992:85; Klair et al.,1998:1-3, 8-11; Letshela, 1999:4; Ozowa, 1992:1-2).

All the abovementioned factors are of major importance for farmers in general, but can also be applied to dairy farmers. No farmer can survive or make profit without using applicable information on all aspects of his enterprises. Farming is a business and should be conducted as such. It is not possible to make the correct decision if it is not based on relevant, authoritative and up to date information.

#### **2.4.4 Framework for assessing information needs of dairy farmers**

When developing a web site, all aspects that might have an influence on providing a successful information resource have to be considered. The information needs of the envisaged target audience are of paramount importance in this regard. A framework for assessing information needs of dairy farmers wanting to produce yoghurt on the farm, was derived from the following sources: Catsberg & Kempen-van Dommelen, (1990:13-35); Dairy Handbook, (1995:1-330); Fellows, (1988:130-148, 159-186, 210-250, 357-398, 421-461); Kunz et al., (1976:20-41); Light, (1989:1, 87-95, 122-128, 155-157); Nicholas, (1996:12-33); Nickerson & Ronsivalli, (1982:135-204, 225-252); Potter & Hotchkiss, (1995:69-90, 138-199, 264-315); Raiken, Kill & Baker (ed.), (1998:75-138, 499-556); Rosenthal, (1991:1-410); Rothwell (ed.),

(1989:1-256); South Africa - Foodstuffs, Cosmetics and Disinfectants Act (No 54 of 1972) and regulations; South Africa - Agricultural Products Standards Act (No 119 of 1990) and regulations; and Tamime & Robinson, (1985:1-350).

In the discussion, information from the abovementioned sources, are adapted to apply specifically to yoghurt making. The framework used, discusses characteristics and aspects of information needs, which have to be included in an information resource.

The framework consists of the following:

- subject;
- subject specification;
- function;
- nature;
- intellectual level;
- viewpoint;
- quantity;
- quality;
- date;
- speed of delivery;
- place; and
- processing of information.

#### **2.4.4.1 Subject**

This is the obvious and immediate characteristic and aspect to be included, also how many subjects are involved. The specificity or depth of interest (general, selective or contextual) needs to be known to decide how much information needs to be included.

- ***Information needs related to the subject to be covered (general definition of yoghurt)***

Yoghurt is the product obtained from pasteurised milk or reconstituted milk, which has been inoculated with a yoghurt culture, *Streptococcus thermophiles* and *Lactobacillus bulgaricus*, and which is allowed to ferment under controlled conditions. It has a characteristic flavour and texture.

#### **2.4.4.2 Subject specification**

Subject descriptions should not be vague or a generalisation, because users need to find specific information quickly.

- ***Information needs related to specific subject description (specific information on yoghurt making)***

Various types of yoghurt can be prepared. According to legislation, yoghurt should have a clean and characteristic flavour, be free of any substance that does not naturally form a part of milk. Yoghurt should be manufactured mainly from milk and reconstituted milk, should after pasteurization be fermented with a yoghurt culture and contain a great number of viable yoghurt type microorganisms. Yoghurt produced in South Africa should comply with the standards as set out in the Regulations relating to Dairy Products and Imitation Dairy Products R 2581 of 20 November 1987, as amended by R 1059 of 3 June 1988; R 2141 of 6 October 1989 and R 1465 of 26 August 1994 and Regulations relating to Milk and Dairy Products R 1555 of 21 November 1997.

For the purposes of this web site, production of the following yoghurt types is covered:

- Set yoghurt – Low fat and fat free;
- Set yoghurt – high and full fat;
- Stirred yoghurt – low fat and fat free;
- Stirred yoghurt – high and full fat;
- Long life yoghurt dessert – set;
- Long life yoghurt dessert – stirred;
- Drinking yoghurt; and
- Frozen yoghurt.

#### 2.4.4.3 *Function*

Users utilise information in different ways and use information for five broad functions, each leading to different solutions. These functions are:

- ***fact-finding*** : needs answers to a specific question which is a precise need which is well defined and is met by facts or statistics;
- ***current awareness*** : needed to keep-up-to date, and can be a vague statement;
- ***research*** : needed when researching a new field for in-depth information;
- ***briefing/background*** : needs information on topics with which the user is familiar with but wants to know the detail; also background information on broad subject areas; and
- ***stimulus*** : the user does not necessarily know what he or she is looking for but wants to sound out ideas; the need is unfocussed and unstructured.

For yoghurt making the following information should be included to meet needs under the five functions above.

- ***Information needs related to function regarding yoghurt making***
  - Information relating to function is divided into:
    - general information on yoghurt making;
    - headings used in the web site; and
    - specific aspects of yoghurt making.
  
- ***General information on yoghurt making***
  - Information should be updated regularly.
  - The web site should be comprehensive, covering all aspects of yoghurt making.
  - It should include a brief summary or overview of the process and a flow diagram which can lead the user to more detailed information.
  - It should describe the different types of yoghurt that can be made both on small and medium scale.
  - It should be specific and applicable to yoghurt manufacture only.
  - It should include some general information useful to farmers.
  
- ***Headings used in the web site:*** The web site on processing of yoghurt should provide information under the following general headings, applicable to all products included in the web site:
  - product description;
  - legal requirements;
  - ingredients;
  - processes;
  - equipment;
  - packaging;
  - storage / shelf-life;
  - energy requirements;

- marketing and pricing; and
  - suppliers.
- ***Specific aspects of yoghurt making:*** Under the heading Processes in the previous list the following subdivisions should be used:
    - product description;
    - clarification;
    - separation (low fat and fat free);
    - standardization;
    - fortification of the milk solids;
    - homogenization;
    - pasteurization/heat treatment;
    - cooling;
    - inoculation;
    - flavour addition;
    - fermentation;
    - stirring; and
    - freezing.

#### **2.4.4.4 Nature**

The nature of the information itself can be one of the following:

- theoretical;
- historical;
- descriptive;
- statistical; and
- methodological.

- ***Information needs related to nature of the information on yoghurt making:***
  - The information should be theoretically based with practical applications suitable for both small and medium scale processing.
  - Legal requirements referring to composition, labelling, and other requirements should be correct and up-to-date.
  - Information on suppliers of processing equipment, packaging material and processing aids should be included.

#### **2.4.4.5 *Intellectual level***

The intellectual level on which information is provided refers to the minimum level of knowledge, expertise or level of intelligence required to understand the information.

- ***Information needs related to the minimum level of knowledge required when making yoghurt using a web site or CD-ROM***
  - Users should be computer literate.
  - Users should be able to read and understand English.
  - Language should be simple and easy to understand.
  - Information should not be too technical.

#### **2.4.4.6 *Viewpoint***

Information can be presented from different viewpoints, approaches or angles.

Viewpoints can be categorized as:

- schools of thought, such as structuralism;



- political orientation, referring to the disposition towards reading information sympathetic to their own political allegiance;
  - positive/negative approaches to the presentation of information;
  - subject orientation, especially in interdisciplinary fields; and
  - objectivity.
- ***Information needs related to viewpoint on yoghurt making***
    - Information given in the web site should not reflect any specific viewpoint, approach or angle, for example promoting the interests of Agrelek.
    - Information should be positive, with no negative comments on any aspect.
    - Information should be given from an interdisciplinary viewpoint combining information from food technology, food production, food processing and agricultural engineering.
    - Information should be objective and not give preference to a specific kind of yoghurt, process or equipment.

#### **2.4.4.7 Quantity**

Users need different quantities of information for different applications. A huge amount of information is available, but is needed in a format suitable for the target audience.

- ***Information needs related to amount of information needed to make yoghurt on the farm***
  - The information included should be a single and comprehensive source of information on all aspects of processing and manufacture of yoghurt.

- Information should be detailed enough to ensure effective use and application.

#### **2.4.4.8 Quality**

The perceived authority of the sender or source of information is often the principal indication of the quality that can be expected. Information generated by some organisations is regarded as authoritative, due to among others, their economical or political power, their known expertise, and importance in a particular field.

- ***Information needs related to quality of the information required to make yoghurt***
  - The information should be correct, authoritative and contain explanations where necessary.
  - It should be possible to validate information using other sources.
  - The person or organization providing the information should be known to be knowledgeable and reliable.

#### **2.4.4.9 Date**

Users usually need the latest information available.

- ***Information needs related to up-to-date information on yoghurt making***
  - The information included should be based on basic resources but also include the latest information.
  - Information should be updated at regular intervals.

- Information should be given regarding the newest processes and equipment, as well as most recent legal requirements.

#### **2.4.4.10 *Speed of delivery***

Information can be delivered using different media such as full-text, on-line services, electronic document delivery and fax on demand. Users usually need information immediately.

- ***Information on yoghurt making related to speed of delivery***
  - Users with Internet access should have immediate delivery of the information they need.
  - The e-mail address of the author of the web site should get a quick response.
  - Obtaining the CD-ROM and also possibly a print copy, should take longer but is also possible by return of post.

#### **2.4.4.11 *Place***

The place in which the information originated can also have an influence on its usefulness.

- Examples are that information from the USA is universally held in high esteem and information from the Third World is either disregarded or not rated highly.
- Academics are often more critical than practitioners, and might distrust information not emanating from an acknowledged authority.
- The language used in the information might not be understood by the user.

- ***Information needs related to origin of the information on yoghurt making***
  - Dairy farmers need information they can use and although information from elsewhere in the world can be useful, it should be integrated and adapted with South African conditions and needs in mind.
  - The web site should not be evaluated only by academics, because they are not the target audience.
  - The language used should be within the range of understanding of the target group.

#### ***2.4.4.12 Processing of information***

This refers to the ways in which information can be presented, or the format in which it should be made available. It can be popularised, interpreted, translated, reviewed, abstracted, or can consist of executive summaries.

- ***Information needs related to the processing of information on yoghurt making***
  - The web site should include an introductory summary, site map, and flow diagram of processes, but the information itself should be complete.
  - Information should be given in an interpreted and integrated format.
  - Information obtained from sources in other languages should be translated into the language of the target audience

## **2.5 Summary**

Taking all the aspects covered in this chapter into consideration it is clear that a number of issues have to be carefully evaluated before a suitable resource tool can be created.

### **2.5.1 Information needs**

The determination of information needs is only one aspect of the information behaviour of users. This study should concentrate on farmers and advisers, and only those needs should be taken into consideration when evaluating the information needs of dairy farmers in South Africa. In this chapter an attempt should be made to determine the specific information needs of dairy farmers who want to manufacture yoghurt. Models of information behaviour and problem solving should be evaluated to establish relevance for developing the web site. These together with the specific information needs should be taken into consideration during the design phase.

Various kinds of information needs can be distinguished, and should be kept in mind when trying to fulfil these needs. The need to obtain knowledge should be provided for, but dormant and unexpressed needs should be anticipated.

### **2.5.2 Information seeking behaviour of the target group**

Using two models of information seeking behaviour, it became clear that elements from the models should be considered when developing a web site. These elements are communication, of which feedback forms an important component. The user communicates with information in the web site, but also needs to be able to contact other sources or people for more information or to gain clarity on some points. The

user should be able to return to previous screens to control facts. Only then can he move from a state of uncertainty to certainty.

### **2.5.3 Obstacles to meeting information needs**

The obstacles to meeting the information needs of farmers should be overcome as far as possible ensure the usefulness of the web site by as wide an audience as possible. Some of the obstacles are inherent in people and cannot be changed. If these inherent obstacles are kept in mind when designing the web site, information should be presented in such a way to minimise the effects of personality traits. The web site should attempt to satisfy the needs of as broad a spectrum of users as possible, but no single web site will satisfy all users. An attempt should be made to overcome the other obstacles relating to time, access, resources and information overload.

### **2.5.4 Content of the web site**

The content of the web site should be specified. The content should be factually correct, but formulated in such a way to be understood by novices. When deciding on the content, a balance should be achieved between the basic and scientific level of information. While factually correct, it should be written in such a way as to be easily understood by most users.

Information should be provided on an extension level, giving information on local markets, requirements, legislation, safety requirements, business plans, where equipment can be obtained and also where advice can be found.

Information on trade and industry levels are often the property of the various organizations, for example: agricultural unions and producer organizations, which are

only available to members. This information should also be made available to users of the web site as far as possible.

#### **2.5.5 Availability of the web site**

The availability of this web site, both on the World Wide Web and as a CD-ROM should make it possible to reach a wide target audience, those with and without Internet access. This web site should be aimed mainly at the novice user, making it easy to use with no previous knowledge of multimedia or web sites. The information provided should be in short manageable units to minimise information overload. Information should also be complete enough to also satisfy more experienced users.