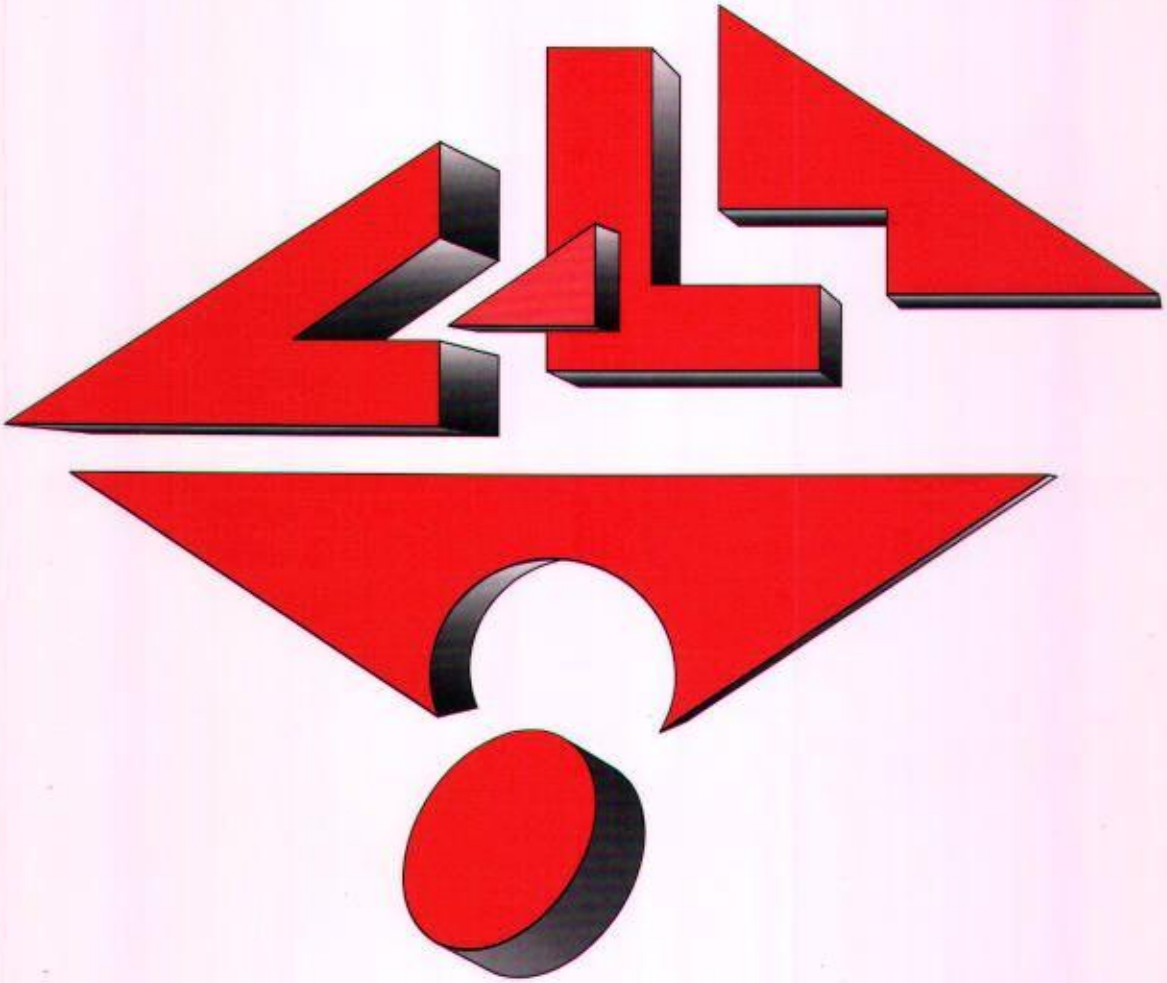
Constructing a healthy balance

Action and research ingredients to facilitate the process of health promotion



H.W. Vaandrager

Constructing a Healthy Balance
Lenneke Vaandrager

Propositions

1. Health promotion is an ongoing process of participatory decision making that requires a regular flow of inputs from a combination of qualitative and quantitative research methodologies (this thesis).

2. A health promotion researcher should act less as a disciplinary expert but more as an equal member of a team who tries to deliver research insights to support decision making. Health promotion programmes are not there on behalf of researchers but researchers are there on behalf of the programmes (this thesis).

3. International collaboration inspires, helps to look at problems and solutions from various perspectives and makes people realize they are not the only strugglers (this thesis).

4. Nutritionists and nutrition educators cannot solve nutrition problems for other people. The challenge is to create learning situations in which people recognize their own nutrition problems...(Whitehead, 1970[1]).

5. The issue for many recent community cardiovascular disease prevention programmes is not so much the ability of the intervention to affect behaviour but the ability to measure behaviour change (Mittelmark et al., 1993[2]).

6. Participatory processes require leadership.

7. Persons with a lot of passion for their job are often more successful than persons with a lot of knowledge.

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[1] Whitehead, F.E. (1970). *Nutrition education research project; report of feasibility study, phase 1.* Washington: Agency for International Development.

[2]Mittelmark, M.B. *et al.* (1993). Realistic outcomes: lessons from community based research and demonstration programs for the prevention of cardiovascular diseases. *Journal of Public Health Policy, 14*, 455-462.

8. Nothing ventured, nothing gained.

9. People who cannot live in harmony with their own social environment, will not be able to apply the principles of health promotion in their profession.

10. An old buzzard with a lot of dedication cannot catch a prey (Pakistani saying).

11. Sensationele gebeurtenissen zoals het in zee storten van olieplatforms hebben een grotere en meer directe invloed op consumentengedrag dan jarenlange milieuvoorlichtingscampagnes.

12. Dat in een zak Flippo's nog steeds chips zitten, is vanuit het oogpunt van winstmaximalisatie, een inefficiënte verkoopstrategie.

13. It is an advantage to have a partner abroad while working on a doctoral dissertation because one is able to physically and mentally distance oneself from the work during visits abroad which helps to put the importance of it all into perspective and get a fresh mind for completion.

H.W. Vaandrager
Wageningen, September 1995

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Action and research ingredients to facilitate the process of health promotion

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Constructing a Healthy Balance

Action and research ingredients to facilitate the process of health promotion

H.W. Vaandrager

Proefschrift
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Voor Lenie en Bart

Contents

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Trying to implement the health promotion principles in an international context has been a great challenge and has resulted in a better understanding of how to facilitate learning processes in the field of public health nutrition. For this thesis I had to analyze, discuss and reflect upon the complicated processes taking place in five European cities participating in the SUPER project. To find a structure for the thesis was not an easy task since so many aspects were interesting and since so many factors were interrelated. In addition, I wanted to write a thesis which was valuable for science as well as for practice. I want to thank my supervisors Cees van Woerkum, John Ashton and especially Maria Koelen with helping me to accomplish this difficult task.

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I am sure this list of people is incomplete but the ones who have not found their name in this list can find their contribution in this thesis. I hope that this book will contribute to a better understanding of processes in the field of health promotion and will assist people working in this field.

Lenneke

1 Introduction

1.1 Background

The all important aspect of nutrition is to acquire sufficient food to stay alive. In many developing countries where food supplies are short, malnutrition is a main issue for the public health agenda (Scrimshaw, 1990). Only 50 years ago, European countries had the same problems and were struggling to ensure that everyone had an adequate minimum diet, given the supply of food available (James, 1988). One of the main achievements over the last half century has been the production of a far greater range of nutritious, attractive and affordable food items. The European population now has significantly more variety of food from which they can select their diet. Classical undernutrition and nutrient deficiency diseases are now rare. Contrarily, abundant ranges of modern food supply allows excessive consumption to become more prevalent. Among others, Wardle (1993) notes that the central importance of nutrition to health has been transformed by the identification of what became known as 'the diseases of affluence'.

Since 1961 there has been a trend towards a decreased consumption of staple foods, which in the Mediterranean countries is cereals, and in Northern Europe, potatoes. At the same time, there has been a marked increase in the consumption of meat and milk. The consumption of fruits and vegetables on the whole tends towards an increase, while the use of alcohol has increased dramatically in the same period (James, 1988). The changing dietary pattern has had a rather dramatic effect on the level of nutrients. The percentage of fat in the diet has increased and the percentage of carbohydrates has decreased.

If we consider the health situation in Europe we see another changing picture. The most striking and consistent change in the period after the second World War is the increase in the premature mortality from cardiovascular diseases, especially ischaemic heart disease and an increase of some types of cancer. But digestive and metabolic disorders and obesity have also been shown to be related to high levels of energy, fat, and salt, and low levels of fibre intake (James, 1988; Helsing, 1991; Tunstall-Pedoe, 1991; Cannon, 1992).

The relation between diet and health has often been discussed because of the concurrent effects of several factors (Dean, 1990). The current state of knowledge

seems to be continually changing. Instead of a firm base, there has come a constant replacement of 'nutritious' and 'non-nutritious' products. Added to this are many contradictions, for example, that potatoes should be boiled in their jackets to best retain the nutrients, but then these jackets seem to contain remnants of fertilizers and pesticides (Jansson, 1993). Although the debate is still going on, Cannon (1992) claims that there is a well-established consensus among the scientific community. In his book titled 'Food and health; the experts agree' he argues that the general agreement can be expressed as follows:

- during the last half century, Western diets have become unbalanced. They now contain too much fat in general, too much hard, saturated fat in particular, too much sugar and salt, and not enough fibre.
- the best diet to reduce the risk of heart attacks is the best diet to protect against obesity, diabetes, common cancers and other western diseases, and is also the best diet to promote general good health.

Apart from the discussion about the actual relationship between diet and health, it is controversial in which stages of life this influence is most important. There are those who see adult (and sometimes children's) diet as one of the crucial lifestyle factors in the prevention of coronary heart disease (James, 1988). Others regard maternal diet and infant feeding practices as critical in the aetiology of coronary heart disease. Relations between adult coronary heart disease and the same adults' intrauterine and postnatal experience have been documented. Barker & Osmond (1986) and Barker *et al.* (1989) used anthropometric measurements on infants and neonates recorded earlier (1911-1930) in the century (weight, placental weight, neonatal head and trunk circumference) and subsequent infant growth, and matched them with the same individuals' mortality experience in adulthood. They demonstrate a strong relationship between mortality from coronary heart disease (and other diseases) and poor foetal and early child growth, and/or lower birth weights.

Summarizing this means that the picture is complex and difficult to interpret but there is a strong consensus that nutrition issues in Northern Europe play an important role in public health. Furthermore, nutrition seems to play an important role in all stages of life. Although viewpoints on dietary influences are changing, this does not mean that strategies to promote healthy eating should not be developed. Nevertheless, people working on these strategies have to be critical about their own work and must be open to adapt their ideas according to new insights.

1.2 Nutritional guidelines

The concern for nutrition has led to the development of food and nutrition strategies in a number of European countries (Helsing, 1991). These are strategies to promote a healthier diet for individual and societal benefits.

One striking contribution of such nutritional strategies to try and prevent diseases has been to publicise dietary guidelines which provide information and advice about diet and health (Booth, 1989; Hautvast, 1986). 'Eat a variety of foods' is often the first advice on the list of nutritional recommendations. The position is due to it being the guideline with the least challengeable rationale. Yet paradoxically it is also the vaguest and the hardest to communicate without substantial extra information. For what is meant (and is often added in an effort to be clearer) is to 'balance the diet' or to choose a fully nutritious mixture of foods. In an effort to promote a real nutritional variety in food choices, this guideline has been translated in some countries as a recommendation to choose from each of a number of food groups at each meal. For example, The Netherlands Bureau for Nutrition Education works with 'The Food Guide', an education model with five categories (carbohydrate, vitamin C, protein, fat and fluids) which advises people to choose from each category for each meal (Breedveld *et al.*, 1993). In Denmark, nutrition educators work with a pyramid model which has at the top food items which should be moderately consumed and at the bottom category food items which are advised for frequent use (vegetables, pulses).

Two types of food that are considered to be particularly important to be varied in a person's daily diet are (whole) grain and vegetables and fruit. These are sources of two of the main types of dietary fibre. Insoluble fibre such as bran is thought to help prevent lower gut disease, and soluble fibre such as pectin in apples, possibly benefits the upper gut. However, the recommendation of dietary fibre (or 'complex carbohydrates') is usually separated out.

The dietary guidelines for industrialized countries universally recommend that individuals cut back their fat intake well below the current average of over 40 percent of energy intake (James, 1988). This guidance is justified mainly by crossnational associations between incidence of heart disease and high intake of fat. Some supporting clinical evidence comes from relations found between cardiovascular disease and high plasma cholesterol levels or low adipose tissue levels of polyunsaturated fatty acids and from reduction in plasma cholesterol level on reduction in intake of saturates (not of cholesterol intake). However, the connections between dietary fat intake, plasma cholesterol and triglyceride levels remain to be fully elucidated. Another rational for reduced intake of total fats is that of reducing or even preventing obesity. The reduction of the consumption of fat-containing food items between meals might well make a major contribution to the reduction and prevention of obesity.

The only established danger from consuming sucrose and other sugars is dental caries, which could largely be prevented by not finishing meals and snacks with sugary drinks and not having such drinks or solids between main meals. Furthermore, dental problems rarely occur when sugar is cleared from the mouth after the meal. In this respect Booth (1989) states that a guideline in terms of sugar

and its total amount rather than the timing of energy intake is inappropriate with respect to weight control, as indeed it is for caries prevention.

The only nutrient-specific advice that cannot be justified largely for its potential impact on obesity is that to cut back on excessive salt intake. Yet even this guideline is closely allied to weight reduction, for both are arguably of help in avoiding high blood pressure (Booth, 1989).

Finally, it is recommended to keep body weight within a desirable range. It is usually stated that the way to achieve this is to eat moderately and to take regular exercise.

Summarizing, a healthy diet is rich in vegetables and fruit; bread, cereals (preferably wholegrain) and other starchy foods; and may include fish and moderate amounts of lean meat, and low-fat dairy produce (Cannon, 1992). Because many studies have failed to find more than modest correlations between knowledge about diet and eating behaviour (Shepherd & Stockley, 1987; Kristal *et al.*, 1990) there is a growing concern about the impact of these guidelines and transfer of knowledge as a possible strategy to improve diets. In this connection Jansson (1993) asserts that the differences between 'actual' and 'recommended' food practices cannot be attributed to lack of information; rather, the problem is people's actual awareness and interest in questions concerning their own personal health, and perhaps especially their attitudes towards and evaluations of preventive measures. Clearly, knowledge is only one factor and as discussed in 1.3 other factors should be taken into account as well.

1.3 Factors influencing food preferences and choice

Interest in dietary change is widespread. To be able to influence dietary patterns in a positive direction it is important to know why people eat what they eat. Insights in food choice can help to plan more suitable nutrition promotion campaigns. This question is not an easy one, since food choice is affected by a large number of factors. The determinants of food choice are only briefly described in this chapter since chapter 3 will fully deal with this issue.

On a individual level taste, knowledge, attitudes and/or beliefs can influence food choice. People choose foods that will bring about desired consequences: for example, foods that will be convenient to prepare, will taste good, are good for their health, and so forth. People's ideas about food and health are unlikely to be based only on professional advice, but are also derived from society's 'food ideology', from family environment, from personal experience, and perhaps increasingly from the media. For example, hot meals may be thought better than cold meals, meat more important to building strength than lentils, and milk a food of special value to invalids (Fieldhouse, 1986). Taste seems to have an especially important role in food

choice because it is not only an expectancy, but it also represents a sensory-affective response to food (Contento *et al.*, 1993). Murcott (1992) stresses that the significance of cultural perceptions of food and eating, especially the symbolic aspects of those perceptions have been overlooked when discussing dietary change. A well known illustration is the fact that once white bread was identified with refinement and feasts. Nowadays, dark bread signalises elegance (Ekström, 1991). Another example was demonstrated by Chapman & Maclean (1993). In their study they found that the adolescent women associated 'junk' food with weight gain, pleasure, friends, independence, and guilt, whereas they associated consumption of 'healthy' food with weight loss, parents and being at home. Through these associations, the food-meaning system relates to issues of adolescent development such as the maturation of relationships with family and friends, and social pressures on women to be thin. In 1943 Lewin already argued that food behaviour is determined by the dynamics of the food situation which includes the channels through which food comes to the table, the gatekeeper governing the channels at various points, and the food ideology of the gatekeeper. He stated that a system of values is the basis of some of the forces which determine decisions about food (Lewin, 1943). Thus, the social environment also has an important influence on food choice. Food is a tool, a language for communicating with other people. People adapt their preferences according to the wishes of other people and in that sense nutritional behaviour is clearly a social affair rather than an individual affair. Meals can been seen as social structures which organize people who eat meals together. Food habits also function to create distinctions between different groups of people in society (Ekström, 1991). Bordieu (1979) in his study of taste, *'La Distinction'*, notes how in food, as in other areas, class distinctions are maintained since as the lower classes emulate the higher ones, and change their tastes, so the upper classes change in response to preserve the difference between them. Gender and power differences are also symbolised and embodied in many cultures by means of eating - which food items are appropriate for men, which for women and how much, as well as who eats first and last, and who serves whom (Caplan, 1993).

A study of literature of Davis (1982) concerned the proportion of income spent on food. He found different proportions for different income groups. There is also strong evidence suggesting that other socioeconomic factors interact with the income-food expenditure relationship to condition the impact on household nutritional cost. Cade & Booth (1990) studied what one had to do to meet the dietary goals. Changes in consumption of specific items such as an increase in wholemeal bread, fruit, vegetables and low-fat products and a reduction of sugary foods are required to help meet the goals. They calculated that the cost of these changes, although small on a daily basis, may be such that certain groups might not be able to afford such a diet. Nelson & Peploe (1990) demonstrated that households in the United Kingdom with two adults and one pre-school child living on income support would have to spent 52% of their income on food to be able to purchase a 'balanced'

healthy diet. Dowler (1993) argues that no household in the United Kingdom has been shown to be able to spend so high a proportion of household income solely on food.

Besides personal, social and economic factors, environmental factors such as farm production and food processing affect both the amounts and nutritional balance of the food supply as well as its price, and all of these are shaped by governmental farm-, trade- and industry policies (Milio, 1991).

The structure of retail trade has changed substantially in the last 30 years. Local suppliers of groceries are disappearing in some small residential areas and in villages. People's shopping patterns have changed as a result, because most goods are available in one shop or supermarket, but the distance to this shop has increased. This trend may reduce the shopping options for consumers with lower incomes and less automotive mobility.

In summary, what people buy and eat depends on individual, social, cultural, economic and environmental factors (Ashton, 1987; Ashton & Seymour, 1988; Glanz & Mullis, 1988). These factors are interrelated, and altogether, food choice is a complex process. It makes nutritional behaviour an interdisciplinary concern, including fields as psychology, health education, preventive medicine, epidemiology, sociology, nutrition, public health, social marketing and consumer research. When trying to influence dietary patterns in a positive direction, it seems recommendable to have an approach which tries to integrate different insights.

1.4 Health Promotion and Healthy Cities

Many commentators have noted that during the period from the 1930s to early 1970s, public health was dominated by the biomedical model. Health was defined as 'Absence of disease' and ideas about health were influenced by the germ theory of disease and infectious disease epidemiology. The main focus of disease prevention in those days was on specific etiology and directed towards high-risk individuals or groups in the population (Dean, 1990). These preventive programmes were managed, controlled and evaluated by skilled professionals.

Since the mid-1970s grave concern has been expressed at the seemingly endless resources required by the increasingly high-technology modern medical care. At the same time key developments occurred in Canada which were to give rise eventually to the Healthy Cities project (Davies & Kelly, 1993). There, the Lalonde Report (Lalonde, 1974) used the ideas of McKeown (1971) who had highlighted the fact that major improvements in health in the nineteenth century were not due principally to medical interventions, but to public health provision. Based on McKeown's ideas, the Lalonde Report suggested that future improvements in health would arise from

improving the environment and promoting lifestyles conducive to health. This broader context of health was already incorporated in the definition of the World Health Organization which defines health as: 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO, 1946). Although this definition has been criticized as being an impossible goal which cannot be translated into operational terms, it does relate to the individual's ability to achieve her or his potential and to respond positively to the challenges of the environment. In several documents it was argued that emphasis should be put on what creates health rather than on disease (Ashton & Seymour, 1988). Therefore concepts such as 'health promotion' or 'the new Public Health' have increasingly received more attention since the 70s.

As a result of the 'new' public health movement, the Global Strategy of Health For All by the Year 2000 (HFA 2000) was accepted as WHO policy in 1981. According to this strategy the task is to ensure that by the year 2000 'all people in all countries should have at least such a level of health that they are capable of working productively and of participating actively in the social life of the community in which they live'. Health promotion was therefore defined as 'a process of enabling people to increase control over and improve their health'. (WHO, 1981). Further development of this strategy led to the formulation of 'Health For All'-targets in 1984 which were updated in 1991 (WHO, 1985; WHO, 1991a). The targets can be divided into three groups. The way in which these groups of targets relate to each other is schematically presented in figure 1.1.

The first set of 12 targets include the basic conditions for health which are equity in health, quality of life and a better health status. To meet these conditions, first of all, changes are required in lifestyles, the environment, treatment and care. These issues are addressed by the second set of targets (13-31). The changes to realize these targets require sustained political, managerial and financial support and mobilization, linked together through an infrastructure that allows a coordinated approach to policy formulation and implementation. These are the subjects of the last set of targets (32-38).

At an international conference on health promotion, held in Ottawa in 1986, five principle areas were outlined for health promotion action:

- building public policies which support health;
- creating supportive environments;
- strengthening community action;
- developing personal skills; and
- reorientating health services (WHO *et al.*, 1986).

These five action areas provide a useful framework for the delivery of health promotion programmes (Bunton & Macdonald, 1992).

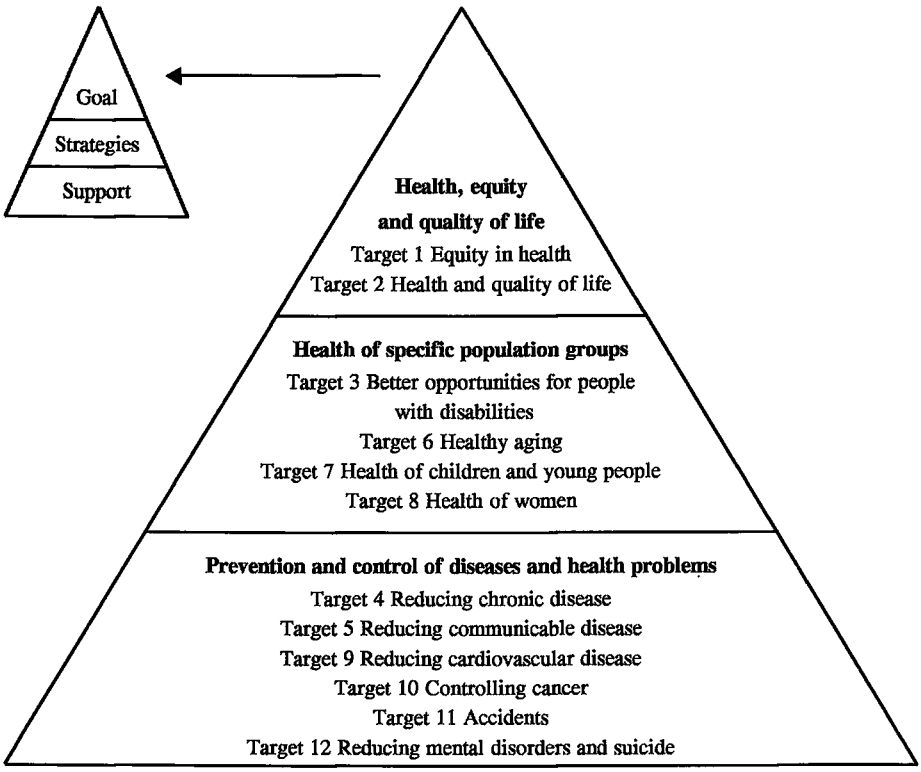

Figure 1.1 The three different categories of the Health For All targets (WHO, 1991a)

During a meeting concerning global health challenges organized by the International Union for Health Education (IUHE) and the World Health Organization it was declared that 'Health related behaviour includes not only those actions that may be defined as healthful lifestyles and preventive behaviours, but also societal actions that support the establishments and implementation of equitable health, environmental, and social policies' (IUHE & WHO, 1991).

To summarize, health promotion is aimed at the population as a whole working according to diverse and complementary strategies. It is about working 'with' rather than working 'on' populations so active participation is believed to play a crucial role. Thus, health promotion aims at both behavioural and environmental determinants of health. Figure 1.2 gives an overview of the characteristics of health promotion compared with traditional disease prevention (adapted from Stachtchenko & Jenicek, 1990).

Health Promotion	Disease Prevention
health = positive and multidimensional concept	health = absence of disease
participatory model of health	top-down model of health
aimed at the population in its total environment	aimed at high-risk groups in the population
diverse and complementary strategies	one-shot strategy
facilitating and enabling approaches	persuasive strategies
changes in physical and social environment	programmes focusing mostly on individuals and group of subjects
non-professional organizations, civic groups, local, municipal, regional and national governments are necessary for achieving the goal of health promotion	preventive programmes are the affair of professional groups from health disciplines

Figure 1.2 Prevalent differences in concept between health promotion and disease prevention (adapted from Stachtchenko & Jenicek, 1990)

The ecological and policy-orientated approach towards health is not new. Winslow (1926) defined public health practice as the science and art of, among other things, 'promoting health and well-being through organized community efforts for...the education of the individual in personal health, and the development of the social machinery to assure everyone a standard of living adequate for the maintenance or improvement of health'. The ideas draw on those developed by other social change pressures. Within psychology, ecological points of view emphasizing setting and context determinants of behaviour and person-environment interactions can be found in areas such as social, developmental, environmental and community psychology, as well as in the related fields of social ecology, public health, environmental design, sociology, political science and public interest law (Heller, 1990; Milio, 1990a; Baum, 1993).

Nevertheless, health promotion has been welcomed widely as a new (or revived) approach in public health. Green & Richard (1993) stress that this renewed enthusiasm can be explained by the three following reasons:

1. The strong and persisting ties between socio-economic status and health. Many have noted the limits of an individual-centred approach such as the one used in medical care;
2. Mass educational approaches have often been found effective mainly among middle- and upper-income populations, leaving unreached or unaffected those in greatest need; and

3. Because the etiology of many health problems often includes the same environmental risk conditions, a structural intervention could be more cost-effective than a series of isolated efforts targeting each individual health problem or health behaviour.

1.5 Major community-based cardiovascular disease prevention programmes

Several recent so-called community-based programmes such as the Stanford Three Community Project, the Stanford Five-City Project, the North Karelia Project, the Minnesota Heart Health Programme, the Pawtucket Heart Health Programme and Heart Beat Wales have started to try and target and involve entire communities to focus on environmental factors and organizational changes in an effort to reduce the risk of cardiovascular disease and cancer.

The North Karelia Project in Europe, the Stanford Three City Project and the Stanford Five-City project in North America all three involved media- and community-based interventions. The Stanford Three Community Project (Farquhar *et al.*, 1977; Fortmann *et al.*, 1981) was based on social learning and communication theories. Two different intervention strategies were compared to each other and to a non-intervention strategy. The intervention strategy in one city was an intensive media campaign and in a second city the media campaign was combined with screening of individuals at high risk for cardiovascular disease, with high risk people receiving individual counselling. Leventhal *et al.* (1980) criticized this project as not being a truly community-based programme because, although it was conducted in a community setting it was still merely a quasi-experimental study of individuals. In addition, it was acknowledged that less costly methods than individual counselling were needed to supplement the media approach (Pancer & Nelson, 1990). The Stanford Five-City Project (Farquhar *et al.*, 1985) was designed to be a more truly community-based programme. In addition to media campaigns delivered through radio, television and print, the intervention included community programmes for educational contacts with community groups; collaboration with local health agencies, voluntary associations, and education institutions. One of the major goals set by the programme was the development of a self-sustaining health promotion structure in the communities involved. The North Karelia Project (Kottke, *et al.*, 1984; Puska, *et al.*, 1985) used approaches similar to the Stanford study. Social learning theory, the theory of reasoned action and communication theories explicitly governed timing, distribution, and content of a five-year media and health education campaign. Attention was given to appropriate modelling, suppressing counter-arguments of healthy behaviour, modifying social norms, and providing the skills necessary for change. Environmental changes were made to enhance or maintain behaviour change. For example, a local sausage factory produced low fat sausages and the county dairy actively promoted low fat products. Diffusion theory provided

the basis for the use of lay opinion leaders in attempting to spread knowledge of ways of reducing personal risk of coronary heart disease. Media and education programmes were not the only vehicles to promote change. Specific instruction or help could be obtained at local colleges, sports clubs, and women's societies for people wishing to give up smoking or change their diet. Finally, local medical services took a more preventive role. Although the Stanford Three-City Project, The Stanford Five-City Project and the North Karelia project had shifted their focus from risk groups towards entire communities and also paid attention to environmental factors, these programmes were still mainly top-down approaches planned and evaluated by professionals.

Compared to the previous described programmes, The Minnesota Heart Health Programme (Jacobs *et al.*, 1986; Kushi, *et al.*, 1988; Luepker, *et al.*, 1994) and the Pawtucket Heart Health Programme (Lefebvre *et al.*, 1987; Lasater *et al.*, 1988) tried to put more emphasis on community activation, community input and leadership to the programme. In addition, more attention was paid to the organization to support individual behaviour change. In the Minnesota Heart Health programme seven strategies were used: (1) involvement of community leaders and organizations, (2) media education, (3) population-based risk factor screening and education, (4) adult education classes, (5) youth and parent education disseminated in schools, (6) health professionals education and (7) community-wide specific risk factor education campaigns. The programme had also initiated environmental changes such as labelling of grocery shelves and restaurant menus to identify healthier alternatives. The Pawtucket programme worked with four phases: (1) promotion/induction/motivation, (2) skills training for specific factor behaviours, (3) support network development, and (4) maintenance/feedback/ generalization. As well as the impact on the individual, the effect at group-, organization- and community level were also of interest. The programme strongly emphasized the importance of the work of volunteers. A similar type of project in Europe, Heartbeat Wales (Nutbeam & Catford, 1987), focused on a total population of nearly three million and organized interventions primarily through the development of local networks as well as through the use of the mass media. For environmental changes the project worked with food manufacturers and distributors to promote food labelling (low fat, low sugar) and the selling of healthy foods, including low fat meat cuts etc. In addition, attempts were made to encourage the development of 'healthy eating' schemes (low fat choices) in both workplace and restaurants. Thus, they tried to establish a number of cues to action and they claim to have made appropriate behavioural choice easier than it had been previously (Bunton & Macdonald, 1992).

Although some of these programmes have been more successful than others the overall effects seem to be modest in size and duration and, in general, these programmes have been very costly. Still for many health professionals the community-based approach as organized so far seems to be a new one which is

expected to have a better outcome. Lefebvre & Flora (1988) argue that most people working according to this approach have experienced the following difficulties:

- a failure by the organization to define mission and objectives clearly due to lack of inter-organizational consensus and inadequate consumer assessment;
- not identifying key target audiences which results in a lack of focus and poorly targeted needs surveys;
- pressures that place political/territorial/professional objectives above consumer needs;
- organizational biases that favour expert-driven programmes; and
- the sense of urgency that often accompanies new initiatives and provides a rationalization for 'short cuts'.

These difficulties are in general practical difficulties and not necessarily caused by the health promotion approach. They are, however, all related to the process. Nevertheless, traditional research has mainly focused on outcome rather than on process. In other words, it has been concentrated on the question whether the community-based model is effective in reducing coronary heart disease risk factors. Several programme planners have therefore recommended that formative evaluation and programme monitoring need to receive more emphasis to discover opportunities and constraints of health promotion rather than just focusing on the measurement of behaviour change.

1.6 The Healthy Cities project

Another example to put health promotion ideas into practice is the Healthy Cities project, which was originally harnessed by health promotors working in North America (Duhl & Hancock, 1988), Europe (Ashton & Seymour, 1988) and the World Health Organization (Kickbusch, 1989). The idea behind the Healthy Cities project is to focus on action for health promotion at a city level by bringing together a partnership of the public, private and voluntary sectors to tackle health-related problems in a broad way (Ashton, 1992). The original intention behind the Healthy Cities project was that by bringing together a small number of European cities to collaborate in the development of urban health promotion initiatives, it would be possible to promote models of good practice which were seen as relevant by other municipal administrations and would be picked up and imitated or developed. Curtice (1993) describes the project as follows:

> 'Healthy Cities can be thought of as an encounter, or many encounters: between the philosophy of health promotion and the constraints and opportunities affecting health work in cities; between an international organization and local government networks; between strategic approaches to improving health in cities and local political needs; between people and groups who had long been

working on local health issues or seeing health in a holistic way and new partners; between the time-scale of health promotion strategies and the timing of historical events'.

The intentions for a Healthy Cities project of four to six cities had to be changed to accommodate the enormous interest in the project. In 1991 the network consisted of thirty project cities located throughout Europe. Focal point of the project is the regional office for Europe of the World Health Organisation in Copenhagen. Since 1991 the number of project cities is still increasing. Tsouros & Draper (1993) claim that the activities of the project are based on strategies that have been developed and endorsed by the cities that are in the network. Examples include the planning of the framework for the 1988-92 period, the information and exchange strategy used by the project and the Multi-City-Action Plans. The cities participating in the Multi-City-Action Plans make arrangements together to address common concerns and find practical solutions in areas such as smoking, nutrition, AIDS and active living.

Davies and Kelly (1993) argue that the Healthy Cities programme has the potential to be a political programme which is about change in power relations in respect of health and illness, and about a fundamental epistemological shift in the conceptualization of health itself. However, social change is more easily recommended than accomplished, because social problems are woven into the fabric of society and reflect longstanding political and economic policies. Many Healthy Cities optimists have come across this barrier and have experienced it to be a difficult and time-consuming process. Furthermore, while some people working with Healthy Cities projects are identifying it as a social movement (see *e.g.*, Tsouros, 1990) its close allegiance with bureaucracies sometimes make this claim problematic. Healthy Cities projects appear to be using the language of radical social movements, with its emphasis on change through conflict, but operating within bureaucratic logic that stresses consensual, incremental change (Baum, 1993).

In spite of these foregoing comments, the Healthy Cities project offers a unique possibility to look at health promotion in practice and what is new and why. These insights are useful for developing appropriate health policies.

Within the Healthy Cities project there has always been a main emphasis on community participation. The way in which this concept is being applied varies widely amongst countries and cities involved in this project.

1.7 Community participation

As has been explained previously, the basis of most preventive programmes has been risk reduction and interventions which were focused on individual behaviour. The locus of responsibility and unit of analysis is the individual who is seen as having

ultimate responsibility for his or her objective health status (Hastings & Haywood, 1991). Many nutrition education programmes which have been running according to the individual approach seem to have failed to be effective (see for example Jansson, 1993). As stated before, dietary behaviour is complex, influenced by a multitude of factors and therefore a broader approach, a health promotion approach which is suggested in the Healthy Cities project, may be more successful in achieving positive health. This broader approach tries to take the social and physical context of individual behaviour into account. For this reason, community participation and creating supportive environments are believed to be important elements of health promotion.

Since views of what community participation in health promotion means are so different, some examples of definitions are listed below:

> 'The involvement and coordination of major community institutions to mobilize community leadership and resources for health promotion and to improve public awareness of health issues (Wickizer *et al.*, 1993)';
>
> '..participation assures that there is respect for people and a basis for pursuing mutual efforts and partnership. In such a context, the educational exchange may be characterized as doing something 'with', rather than 'to' others (IHUE & WHO, 1991)';
>
> 'The community participation approach accepts equity as a desirable goal, but at the same time accepts that inequity is at present a fact of life and makes provisions for it. The emphasis is on allowing people themselves to define their own needs, set their pace and use methods within the limitations of their human, economic, political and technological resources. The role of the expert is envisaged as an enabler who will help community members to raise their competence in doing what they think is important for them and their community (Baric, 1990)';
>
> 'Community participation has three characteristics; it has to be active, it implies that people have the right and the responsibility to make choices and therefore have power over decisions which affect their lives and mechanisms have to be in place to allow choices to be implemented (Rifkin *et al.*, 1988)'.

Clearly these definitions indicate different levels of participation, but all stress the importance of health promotion as a collaborative and not an individual process. Chapter 4 explores the different interpretations of community participation and the way people have applied the concept in practice.

It is important to note that a health promotion approach does not mean that all programmes must be grassroot efforts that build up from citizen's concerns only.

Many health programmes are launched because of epidemiological data gathered by health authorities identifying health problems of sufficient magnitude to warrant attention. An example where this clearly happened is the North Karelia project where awareness was created through the Seven Country Study. In many cases, citizens may not be aware of the scope of a health problem or health risk identified. Consequently, a first priority of an information campaign is to alert the public to the problem. However, the next step, engaging people into the process, is often overlooked by the planners of these programmes. According to McKnight (1992) professionals seem to have great skills in managing and working within professional systems, but skills are much less developed once a cross over into 'the community' is made. The community is experienced as complex, disordered, unstructured and uncontrollable and many health professionals begin to discover that their powerful tools and techniques seem weaker, less effective and even inappropriate in the community. This implies that it is difficult to put the principle of community participation in to practice and that further development and research is needed. Examples of good practice could be very helpful to identify opportunities for involving the community.

1.8 The SUPER project, a Multi-City Action Plan

1.8.1 Background

The previous paragraphs demonstrated a consensus about nutrition issues playing an important role in health concerns, about nutritional behaviour being influenced by many factors and about a holistic or health promotion approach being a (possible) better alternative for nutrition improvement than the individual risk-factor approach. Emanating from these ideas the SUPER project was developed.

Pilot studies carried out in Liverpool (Vaandrager, 1989) and Valencia (Vaandrager *et al.*, 1992a) found that supermarkets in favoured parts of the cities offered more choice, carried more information on nutrition, had a greater variety of vegetables and fruit, had more choice in pulses and herbs and more 'healthy' products, (*e.g.*, low in fat, sugar or salt or high in fibre) than supermarkets in the other areas. In the deprived areas products low in fat or sugar were not generally available in the shops. At the same time it was found that people in these areas consumed less healthy, cheaper types of meat and consumed less vegetables. These results confirmed the role of the social and environmental factors in dietary behaviour.

The results of both studies stimulated the idea of a European project to exchange ideas and to use available information and experience about food choice and possibilities for nutrition promotion in different European cities. Five European 'Healthy' cities agreed to participate: Liverpool (U.K), Valencia (Spain), Horsens

(Denmark), Rennes (France) and Eindhoven (the Netherlands). The project was accepted as a Multi-City-Action-Plan (MCAP) within the Healthy Cities framework of the World Health Organization. Each city decided to work on local level with the existing structures and to explore local possibilities. In each city two areas were selected (a deprived area and a wealthy area) and people living and working in these areas were asked to get involved in the project with the ultimate aim to improve nutritional habits. The activities in supermarkets were seen as essential since they have an important environmental influence. The initial idea for each of the cities was to follow a three year working plan containing three main steps: (1) a baseline study, (2) nutrition promotional activities in social, commercial and health settings and (3) an evaluation study (Vaandrager *et al.*, 1991). The programme in each city was based on the same principles but differed in detail because of local and cultural differences.

Since the project started in 1991 the network has been expanding. Amadora (Portugal), Cagliari (Italy) and Charleroi (Belgium) have also joined the programme. Although these cities gave new and interesting input in the network it was decided not to include the description of these projects in this doctoral dissertation because it is complex enough to describe and compare the processes in the five cities in which the project originally started.

1.8.2 Participants of the SUPER project

Within the project several groups are represented: (1) universities and research institutes responsible for research and evaluation; (2) the health sector (municipal health services) experienced in organizing and implementing promotional activities; (3) community dieticians who have a high level of nutritional knowledge and are close to the target groups; (4) national bureaus for nutrition education which are experienced in the production of promotional materials; (5) schools and community groups (social work, neighbourhood associations) to reach and educate people; (6) supermarket managers who can make health a product to sell; (7) inhabitants who are able to deliver cultural insights, beliefs and knowledge, amongst others about the social structure of the community; and (8) the World Health Organization Healthy Cities project which provides the overall framework for the project and linkages to other Healthy Cities.

The project involves a European project-steering-group, a project co-ordinator and participants from each country who represent their local steering groups. The European steering group focuses on management, planning, discussing research outcomes, training programmes, control of budget and operation responsibilities of nutrition promotion activities. The representatives of the local steering groups come together regularly to discuss local programme planning and exchange ideas and insights. Attention is paid to special aspects of local problems and possible solutions,

attributes of target groups, and appropriate technical support with regard to local shops. To ensure the success of the project, the supermarket managers have been consulted and involved early in the development stage. Project workers tried to develop open and positive relationships with the supermarket managers. Managers should see the project as a community service, part of the store's educational strategy and an effective marketing tool. They know how their stores operate and how their employees could be involved to facilitate programme implementation. Experience in the United States (Mullis *et al.*, 1987; Mullis & Pirie 1988) has indicated that to collaborate successfully, the health promoters and supermarket managers have to listen and recognize one another's needs.

An essential element of the project is the exchange of new ideas and new developments, models of good practice and good working techniques among the cities concerned. Because of the multi-disciplinary nature of the teams (local/international) a variety of skills and expertise is available, since each participant, institute or organization has different qualities. Their combined contribution becomes more than the sum of their individual contributions. This effect can also be referred to as 'synergy' (Koelen & Brouwers, 1990).

1.8.3 The four step approach of the SUPER project

The SUPER project has a four step approach (Vaandrager *et al.*, 1993a) and is based on the emerging understanding of Health Promotion as developed by the World Health Organization (Taket, 1988), on theoretical considerations with regard to the nature of knowledge and information processes (Koelen & Brouwers, 1990) and on the experiences gained in community-based nutrition promotion programmes (Cheadle *et al.*, 1991). It was felt that a complete nutrition promotion programme should be based on scientific evidence and requires social and community action as well as individual behavioural change. The SUPER-programme includes:

1. Intersectoral organization and collaboration for planning and carrying out nutrition promotion activities (Koelen & Brouwers, 1990; Taket, 1988);
2. Environmental interventions which help to create opportunities to follow a healthy diet by removing barriers (Glanz & Mullis, 1988, Milio, 1991). This may be the most appropriate and effective way to deal with the inequalities in health;
3. Community action to facilitate health promoting behaviour of individuals (WHO *et al.*, 1986); and
4. Efforts to encourage individuals to adopt and maintain nutritional habits preventing disease and promoting health (Koelen, 1988).

Within the SUPER project the community based approach is defined as involvement in planning and activities of people who work and live in the community using

existing possibilities to promote good nutrition and to create supporting environments. It follows that the whole issue of nutritional behaviour includes education, information, culture, trade, transport, distribution, industry and social services. This involves not only the government, but also the commercial sector, professional associations, voluntary organizations, and communities. All these elements could work on their own and still be effective to some extent, but it is clear that such a complex phenomenon as dietary behaviour can only change through an intersectoral approach which implies a contribution of all these parties involved (Vaandrager *et al.*, 1993a).

1.8.4 The objectives and targets of the SUPER project

The aim of the project is to produce practical ways of improving the nutritional status in different European country settings. The objectives can be divided into outcome objectives and process objectives:

The outcome objectives are:

- a positive change of environmental factors (physical and social) which influence public nutrition; and
- a positive change in knowledge and attitudes regarding healthy diets and a change in dietary behaviour to improve public nutrition as a contributing factor to the long-term reduction of nutrition related diseases (cardiovascular disease, cancer, etc.).

The process objectives are:

- to incorporate the networks and the activities initiated in the project into the local structures so that community based nutrition promotion becomes a structural approach; and
- to develop practical tools for health promotion programmes. Based on the experiences in the five cities, a resource pack will be developed which contains guidelines for planning, implementation and evaluation of community based health promotion activities, with special reference to cooperation, communication, management and research techniques, to be used in other cities.

1.8.5 The scientific approach within the SUPER project

As long as health was measured by the absence of disease it was fairly easy to evaluate preventive, diagnostic and therapeutic efforts (Stachtchenko & Jenicek, 1990). Disease prevention research, however, is insufficient for the health promotion approach since health promotion not only deals with the explanation of certain

phenomena, but also has to solve problems noticed and guide the process. Health promotion research compared with disease prevention research is much more complicated due to the difficulty of showing the success and because of uncertainty about which factors have contributed to the health outcomes. Health promotion research inevitably involves a degree of uncertainty. The central element of this uncertainty is related to the lack of agreement and/or the incomplete state of knowledge concerning the nature of the problem (*e.g.*, uncertain etiological evidence linking nutrition to specific health problems) and the potential approach to change social and individual behaviour. Since health promotion works according to a more holistic and therefore more complex picture it is studying 'webs of causes and webs of consequences' situations rather than simple cause-effect relationships. Related to this notion of uncertainty are issues of consensus and agreement with different partners on possible approaches to tackle the problem. Thus, although a general agreement on dietary guidelines may be reached, a community member might believe in lowering the prices of healthy products as a policy measure, whereas a health worker would prefer transfer of knowledge (*e.g.* through education).

Because strategies of health promotion programmes are far broader than those of disease prevention Stachtchenko & Jenicek (1990) argue that evaluation should be broad enough to encompass the wide array of activities in health promotion. Outcome evaluation has been a dominant research topic. The evaluation question in this case is to determine whether or not the desired dietary patterns have changed in a positive direction. Since the process is very relevant to health promotion, the evaluation aim should not simply be to assess whether an intervention works, but also to understand why it works so that it can be repeated and/or refined. Correspondingly, a wider range of evaluation methods needs to be employed. This type of evaluation is also of great value to practitioners and policy makers. It could therefore be argued that it is important to try and demonstrate changes on different levels: in addition to changes at the individual level (increase of knowledge, behaviour change), changes in the environment (availability of choice) and at organizational and political level are also important to visualize. Furthermore, with this information it is possible to develop strategies. Interest in changes on different levels influences the research methodology and the type of data being gathered. For disease prevention research, quantitative data (*e.g.* blood pressure) are most relevant whereas for health promotion research a combination of quantitative and qualitative data is more relevant to be able to build an overall picture. This means data collected through secondary sources, informal interviewing, conversations, observation, focus groups, content analysis and structured questions and the use of inventories and demographic data. By blending and integrating methods and data studying the same phenomena, a more complete, holistic and contextual portrayal can be captured. This is also referred to as triangulation (Scrimshaw & Gleason, 1992).

Overall, health promotion is an ongoing participatory process of decision making that requires a flow of regular inputs rather then a one-intervention-evaluation

situation. Health promotion is not a fixed and controlled approach but flexible and multiple interventions or solutions are being carried out.

There are now different models of the role of researcher. In the classical type of research it is up to the behavioral scientist to discover the basic facts and relationships. It is up to others to make use of what has been discovered. Set against this model is the one where the researcher is more involved in the process. The starting point here is that both for the advancement of science and the improvement of human welfare strategies, research and action should be closely linked. One could argue that this model fits health promotion better since all the characteristics of the Ottawa Charter are active concepts (McQueen & Noack, 1988). Health promotion is an ongoing process of decision making. Change or innovation is a main component of all of the characteristics of the Ottawa Charter. To be able to develop a process of change, resulting in organizational learning over a considerable period of time, the researcher can play an important role in stimulating and guiding this process. Within this model the researcher acts less as a disciplinary expert but more as an equal member of the team who tries to deliver research insights to support decision making and tries to mobilize the relevant expertise (Foote Whyte, 1991). It means organizing ourselves for innovation more effectively (Engel & Salomon, 1994). By working this way, the researcher is constantly challenged by events and by ideas, information, and arguments put forward by the project participants. If the advance of science is a learning process, clearly this continuous learning can be very efficient. Since health promotion is a participatory process, the researcher does not have the certainty of having similar information at the beginning of the programme compared to the end of the programme, because it is difficult to predict the developments. This of course does not mean that the researcher does not have to formulate a plan or have an overview. It only means the researcher should be flexible and be able to adjust methodologies according to the process based on valid arguments. Figure 1.3 displays the most important different characteristics of health promotion research and disease prevention research.

The assessment of the effectiveness of the intervention in terms of either behaviour change or risk reduction in itself is rather narrow, because it is also interesting to assess the penetration of programmes within target populations, and to test the dissemination process of widescale implementation. Within the SUPER project research is carried out to test acceptability and use within professional networks. Consumer acceptability of interventions is assessed, and structural constraints and opportunities presented by organizations (such as schools and health services) are identified. This contributes to understanding of success or failure in the dissemination process.

Based on the considerations described above, the SUPER project is not designed to test hypotheses. It is action-research. Step by step actions are taken, adapted and improved. Research supports and stimulates the process of shared decision-making.

Health Promotion Research	Disease Prevention Research
'webs of causes, webs of consequences' situations	simple cause-effect relationships
object of research (evaluation) is mainly the ongoing process of decision making	object of evaluation is endpoint effect evaluation
research is focused on changes on individual, environmental, organizational and political level	research is focused on changes on individual level
Triangulation: combining qualitative methods (verbal, document and observational data) with quantitative methods	independent and dependent variables are most likely quantitative data (drug intake, blood pressure, cholesterol levels etc)
uncertainty about having similar information gathered by comparable methods at the end of the programme as obtained at its beginning	comparable information is available at the beginning and at the end of a health programme (initial and subsequent states comparable)

Figure 1.3 Characteristics of health promotion research and disease prevention research (adapted from Stachtchenko & Jenicek, 1990)

The effectiveness, feasibility and comparability of the project is being evaluated in the course of three years. Research to guide and support the project is carried out on:

- the individual level (knowledge, attitudes, behaviour);
- the environmental level (local possibilities to buy healthy food or to obtain information about healthy nutrition);
- the community level (social networking, including the quality of participation from the different participants and conditions for cooperation); and
- the level of the project as a whole (incorporation in the structure).

The idea is to develop health promotion models of good practice in the field of nutrition. In that way it is more action research, promoting involvement of different actors. This approach leaves enough space for collaborative decision-making and development of new ideas. It promises to give more results than a fully programmed approach would where the researcher is in control of everything.

The SUPER project, which consists of five case-studies (five field-experiences), is being analysed in this doctoral dissertation because it could give many insights in the health promotion approach. The three main research questions are:

- Is the health promotion approach suitable for promoting healthy nutrition?
- What factors contribute to success or failure in developing a health promotion approach aimed at improving public nutrition?
- Is the knowledge gained by this multiple case study suitable for other cities and other topics?

The main objective of this doctoral dissertation is the development of strategies for facilitating processes of local, national and international **collaboration** in the field of nutrition.

This doctoral dissertation is set up in the following order. In chapter 2 the food consumption patterns and the health problems related to these food patterns in the participating countries are described. This background information helps to understand each political and cultural situation of the countries involved in relation to nutrition and nutrition policy. Chapter 3 explores studies of and approaches as to why individuals and population groups eat what they do. Therefore, different models explaining food selection behaviour are discussed while social, cultural, and environmental factors are considered. A special chapter is devoted to community participation and intersectoral collaboration and examples of the health promotion approach in the field of nutrition are given. These chapters are the basis for the SUPER project of which the project methodology is described in chapter 5 and the research methodology in chapter 6. Planning, organization and research outcomes will be described in detail for the situation in Eindhoven in chapter 7, followed by a comparison of the outcomes and processes in the other countries involved in the SUPER project (chapter 8). In chapter 9 general conclusion, discussion and policy implications are described.

2 Diet, health and nutrition policy in Denmark, the United Kingdom, the Netherlands, France and Spain

2.1 Introduction

To formulate action plans in a nutrition policy context, it is necessary to have a fair understanding of actual food consumption patterns of the population for which the plans are being made. This chapter presents the food consumption patterns, nutrition related diseases and nutrition policy in the countries participating in the SUPER project which are Denmark, the United Kingdom, the Netherlands, Spain and France. For each of these countries the following items are briefly discussed:

- background: number of inhabitants, main economic activities and agricultural production;
- food culture: meal patterns, special food customs and dishes;
- the actual diet: restricted to main food products and macro-nutrients;
- nutrition related diseases: occurrence of coronary heart disease and cancer; and
- national nutrition policy: national actions to promote health through nutrition.

This discussion is followed by a paragraph about similarities and differences between these countries. First of all general nutrition and nutrition policy in Europe are discussed.

2.2 Europe

2.2.1 Food and nutrition patterns

Between 1800 and 1870 the first industrial revolution took place. During this period potatoes and rye were the main staple foods. At that time about 65% of the household budget was spent on food. From 1870 till 1920 the second industrial revolution occurred. Wheat became the staple grain. More food energy became available, but still about 60% of the budget was spent on food. Between 1920 and

1950 society was restructured. Meat and sugar became more widely available and the budget used for eating and drinking decreased to 50%. From 1950 till now the economy assumed the form of mass production. Incomes and wealth rose sharply. A great number of the population moved to urban settings where exercise and energy expenditure was often lower than in the country side, while levels of smoking and stress tended to increase. More food energy became available, especially from products of animal origin. The proportion of a household budget spent on foods dropped from 30% even to below 20% in certain countries. Food became relatively inexpensive (Hermus, 1991). On the whole, present-day dietary patterns in Europe are a result of:

- technological development, which was particularly important in the production, commercialization and distribution of food products;
- changes in the way of living;
- improvement of social-economical living standards; and
- changes in the taste of the consumer (Hercberg *et al.*, 1985).

Thus, food intake has changed strikingly in many countries over the last years: a decreased consumption of staple foods, mainly cereals and potatoes, and a marked increase in the consumption of meat and in most countries also milk and milk products. Fruit and vegetable consumption mostly increased, while alcohol consumption increased dramatically. The rapidly changing dietary patterns in Europe have had a clear effect on health and the occurrence of specific nutrition related diseases (Helsing, 1991; James, 1988).

2.2.2 Nutrition related diseases

There is a strong and growing consensus that the changing dietary patterns are associated with the increased prevalence of obesity, hypertension, cardiovascular diseases, diabetes mellitus, osteoporosis and some cancers. Dental caries is also an important diet-related condition in some regions (Cannon, 1992; WHO, 1992).

Coronary heart diseases play a prominent role in determining the morbidity and mortality among middle-aged and elderly populations in Europe. In Southern European countries heart attacks are not found on such a scale as in the rest of Europe. However, in these countries they have become a common cause of death as well (Dodu, 1988; Lewis, 1980; Cannon, 1992). Death rates in Europe from coronary heart disease among those aged under 65 years have been declining since the late 1970's, although they remain among the highest in the world. Only part of this decline can be attributed to prevention, including changes in diet. In several economically advanced societies, most apparently in Eastern Europe, disease rates are still growing. Coronary heart disease shows a clear inverse relation with social

status. A possible explanation is the role of particular working and living conditions more prevalent among lower social groups (Siegrist, 1991).

Evidence is emerging that high intakes of anti-oxidant nutrients, principally vitamin E, but possibly also vitamin C, carotenoids and selenium, as contained in a range of foods, notably vegetables and fruit, may decrease the risk of coronary heart disease associated with raised blood cholesterol levels (Gey *et al.*, 1991).

Obesity carries a substantial risk of premature mortality and morbidity above that experienced by non-obese people. Obesity is often accompanied by elevated levels of blood cholesterol and blood pressure, and so by a risk of coronary heart disease, and is associated with increased prevalence of non-insulin dependent diabetes, gallstones, arthritis, and some cancers. It seems increasingly likely that in many people blood pressure is positively related to habitual sodium or salt intake (James, 1988).

The West European dietary pattern, relatively high in meat, fat and sugars, and relatively low in vegetables, fruit and starchy and cereal foods (such as potatoes, bread, pasta, rice breakfast cereals etc.), is associated with a pattern of high incidence of breast and bowel cancer (James, 1988). The most authoritative estimate of a dietary contribution to cancer, particulary of the bowel, breast and prostate, is around 35%, lying with some degree of certainty between 20% and 60% (Doll & Peto, 1981).

2.2.3 Nutrition policy

Fifty years ago nutrition policy objectives of European countries were limited under wartime conditions to ensuring that everyone had an adequate minimum diet, given the supply of food available. Nowadays, especially in the Northern countries of Europe, classical undernutrition and nutrient deficiency diseases are rare. The plentiful and varied modern food supply allows excessive consumption and 'diseases of affluence' to become more prevalent. Governments of several European countries have responded to these developments and have adapted their existing nutrition policies or have started to develop them with the aim to intervene to prevent people to catch these so-called 'diseases of affluence'. Therefore, nutrition policy nowadays is aimed at ensuring that everyone can easily choose a healthy diet from the wide range of food available.

Helsing (1991) defines nutrition policy as 'a set of coordinated actions, based on a governmental mandate, intended to ensure the nutritional quality and safety of the food supply to the population'. The provision of wholesome food, however, is only

one element of the nutrition policy picture. Sims (1993) has identified six policy components in nutrition:

1. Providing an adequate food supply at reasonable cost;
2. Ensuring the quality, safety and wholesomeness of the food supply;
3. Ensuring food access and availability to those lacking resources or the ability to obtain sufficient food;
4. Providing research-based information and educational programmes to encourage the public to make informed choices;
5. Maintaining a scientific base in food and nutrition; and
6. Improving access to nutrition services and integrating them into preventive health care and medical services.

Nutrition policy exists as the nexus of a host of other policies (agricultural, health medical, social, economic, educational), each of which is the product of its own set of influences, directives, actors and infrastructures.Sims (1993) developed a 'systems model' showing the role of each component on the nutrition policy component. This figure demonstrates both the simplicity, as well the complexity, of nutrition policy. *Input* to the system are those policies (mainly agricultural) that affect the quantity and quality of food available. *Process* is best conceptualized as all those events and situations affecting the use of the food supply. Food consumption, the major process element, affects the *output* of the system. These outcomes can be related to improved individual health as well as to sustainable environments. While agricultural policy directly influences food supply, both health/medical care policy and environmental policy influence food consumption by means of a vast array of programmes and services. Nutrition policy is no longer synonymous with food policy, nor solely the domain of agricultural policy. This makes nutrition an ideal arena in which to demonstrate the principles of health promotion.

Nutrition policy, however, is a controversial issue given the fact that the consumption patterns have a major impact on the agricultural and food processing industries. Nutrition policy in Europe usually falls under health and agriculture departments. Although in recent years there is an increased emphasis on preventive health care, nutrition policy has mainly been dominated by farmers and food manufacturers and nutrition policy for health still plays second place. Therefore, in many European countries, food quantity comes first, nutrition for health second. A clear example can be found in the field of nutrition labelling. The EEC adopted a directive on nutrition labelling in 1990. For this directive the free trade argument appeared to be more influential than the need to enable consumers to make a well-informed choice. The result was, that rules for nutrition labelling became less strict in favour of free trade (Douwenga *et al.*, 1992).

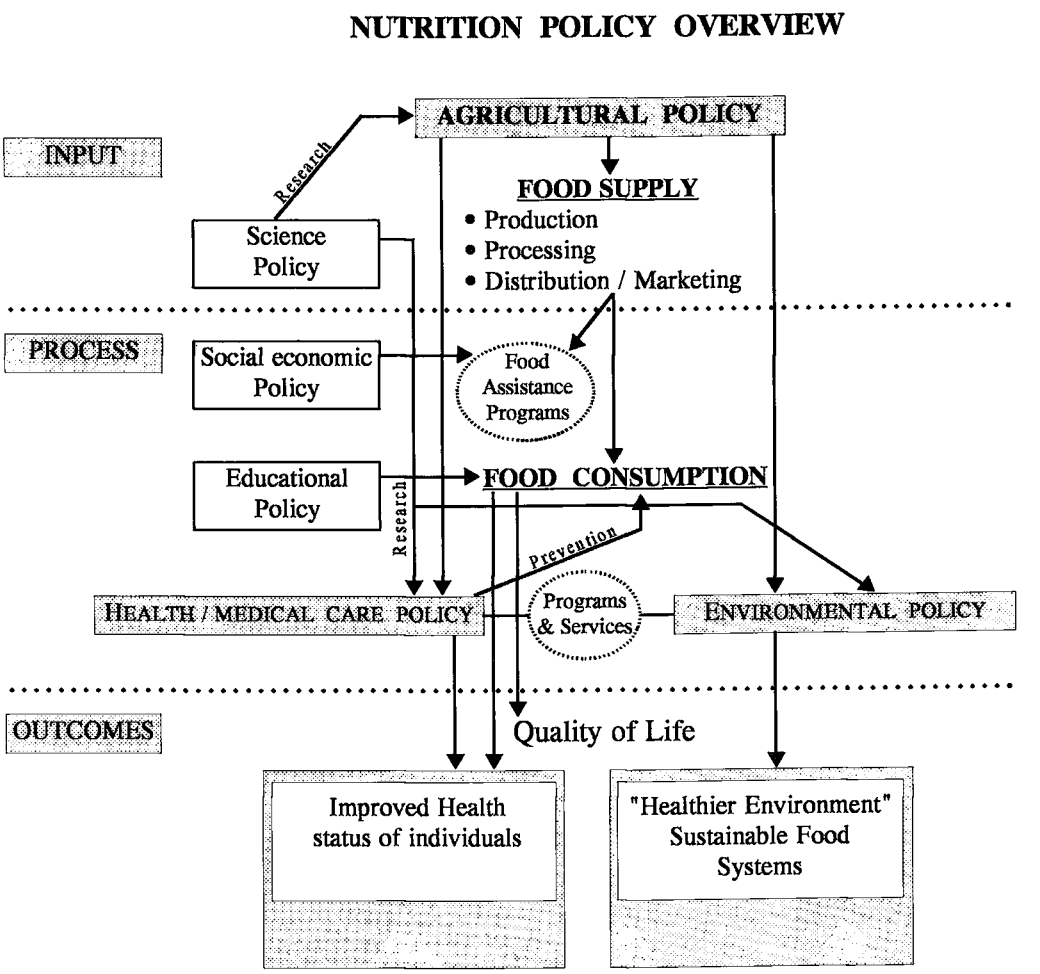

Figure 2.1 Nutrition policy review (from Sims, 1993, reproduced by permission of Williams and Wilkins, Baltimore, Maryland, United States)

Furthermore, as Dowler (1993) argues, in the food and nutrition area it is hard to demonstrate simple cause and effect relationships between policy inputs and the corresponding immediate outcomes. It is therefore hard to evaluate or prioritize nutrition policy strategies. Nutrition goals are seldom clearcut and often appear to be conflicting, and few can demonstrate the efficacy of mechanisms to achieve them.

Apart from what the most appropriate strategy is there is also the issue of which instruments a government is going to use to implement the policies. According to Milio (1990a) the range of instruments with which policy goals may be reached includes the politically and economically less costly means: information, education, research and evaluation. But these are also less powerful in effecting change compared to the more expensive - in political and economic sense - structural changes to be achieved by economic measures like subsidies and pricing, production controls, development and marketing support, direct services, food composition and advertising regulation.

How the governments of the different countries involved in the SUPER project have interpreted nutrition policy for their country is explored in the following paragraphs.

2.3 Denmark

2.3.1 Background

Denmark has a population of about 5 million. The population development in the Scandinavian Countries is characterized by a relatively low birth rate and a long life (NOMESCO, 1991). Denmark is a highly industrialized country with a high standard of living (one of the ten richest countries in the world) and an intensive agriculture that benefits from favourable climatic and geographic conditions. The main products are wheat, oats, barley, rye, potatoes and sugar cane. Cattle breeding is important too and is mainly focused on dairy-produce en slaughtering for export. At the same time fishing is important. Two thirds of the agriculture production is exported, equivalent to 25% of the total exports in 1989. Denmark imports a substantial quantity of fruit and vegetables, mostly from Southern Europe.

2.3.2 Food culture in Denmark

Danish food culture includes a wide variety of habits and traditions. From a quantitative point of view Danish eating habits are changing (consumption of less potatoes, cabbage, and bread and an increasing use of meat). Qualitatively, Danish eating habits have not changed; people still eat the usual food items. Dinner is still the most important energy-, vitamin- and mineral-source. Milk products and cheese are mainly consumed for breakfast and at lunch. Vegetables are mainly consumed at dinner, fruit in between two larger meals, meat at dinner but also at lunch. Fish is mainly consumed at lunch. Lunch and dinner contain most fat. Meals in between and breakfast contain most sugar (Jensen, 1990).

Characteristic of Danish food are beef patties, meat balls, sausage, boiled potatoes with brown gravy and the Sunday pork roast dinner. Traditional Danish food is also influenced by other food traditions which have entered the Danish culinary repertoire during the past 20-30 years (Land, 1994).

In 1990, 91% of married women aged 25-44 years were employed. Most children in Denmark therefore attend day-care institutions. This means that families eat fewer meals together than they did 30 years ago, and that an increasing proportion of the population of Denmark depends on institutional catering or has the option of eating institutionally catered food. The extent of women's paid employment might have an effect on the family diet, as there is less time to prepare meals. Families therefore use more highly processed products and may more often use faster methods of preparing food such as frying. In recent years the use of microwave ovens to prepare food quickly has increased. Furthermore, there is a growing consumer movement demanding so-called natural products and more and more farms are shifting towards organic agriculture (Ministry of Health Denmark, 1992).

2.3.3 The Danish diet

A nationwide survey carried out by the National Food Agency (Jensen, 1990) showed that people's intake of most vitamins and minerals is adequate, but that the Danish eat too much fat. A total of 43% of the dietary energy intake in Denmark derives from fat, which is an unusually high percentage compared with the average fat content of the diet in other countries in Europe. The total consumption of fats is decreasing, but is still the largest one compared to other Scandinavian countries. The sources of fat in the diet are butter, margarine, lard, oils, meat and dairy products. Poly Unsaturated Fatty Acids (PUFA's) are mainly from fish products in the Danish diet. Dietary fibre comes from cereals, vegetables and fruit. In the Danish diet this is 2.1 g/MJ dietary fibre and it should be 3 g/MJ. According to the food balance sheets, consumption of pork, cheese and high-fat dairy products has increased since 1985 and the consumption of butter and margarine has fallen (Ministry of Health Denmark, 1992). The quantity of fat in food measured in kilograms per capita and the alcohol consumption is largest in Denmark compared to the other Scandinavian countries (NOMESCO, 1991).

2.3.4 Nutrition related diseases in Denmark

The most important diet-related noncommunicable diseases in Denmark are cardiovascular diseases and cancer, followed by obesity, hypertension and non-insulin-dependent diabetes mellitus (Ministry of Health Denmark, 1992). Denmark is following the international trend of a decreasing incidence of overall heart disease (Vital statistik, 1991), although compared to other western countries Denmark is

lagging behind in this respect. Cancer is slightly increasing (Storm *et al.*, 1991). Cardiovascular diseases still stands for 44% of the causes of death in Denmark and Cancer for 25% (Vital Statistik, 1991). The mortality rate from cardiovascular disease is highest among unskilled workers and lowest among groups of high income employees. The proportion of energy derived from fat, protein, and carbohydrate has been found to be approximately the same for the different socioeconomic groups. Unskilled workers tend to consume more of their food energy as fat, but this difference is probably not large enough to cause a difference in Health Status (Ministry of Health Denmark, 1992).

2.3.5 Nutrition policy in Denmark

The first proposal for a nutrition policy was made in 1984. It covered nutrition research, dietary composition, quality standards, institutional catering and nutrition education. The health promotion programme in 1989 of the government of Denmark describes the overall goals of nutrition and food policy as being:

- to help motivate the population to choose a diet that provides the nutrients required to promote health and prevent disease; and
- to ensure wholesome food is available.

Achieving these goals requires substantial changes in the population's dietary habits. The health promotion programme of the government of Denmark emphasizes several important policy instruments to accomplish this:

- nutrition education and food labelling;
  Two important agencies which are working on this field are: The National Consumer Agency and the National Food Agency. Furthermore, Denmark has an institution responsible for public nutrition education. Denmark is trying to give high priority to education in nutrition and hygiene in the first nine school years and to ensure that all pupils receive this instruction, in accordance with the health promotion programme of the government of Denmark.
- influencing the supply of and demand for food
  - food production
  - pricing policy
  - food distribution;
- public and private mass catering; and
- research, surveys, pilot projects and reports (Ministry of Health Denmark, 1992).

2.4 United Kingdom

2.4.1 Background

The United Kingdom has a population of about 58 million. Here agriculture accounts for approximately 50% of the British food production and provides amongst other products barley, potatoes, wheat, oats, and sugar beets. Horticulture is heavily intensified. Livestock includes poultry, sheep, cattle and pigs. The last few years this country has had many problems because of the recession and a comparatively great number of people have to live in poor conditions.

2.4.2 Food culture in the United Kingdom

The British are famous for their pies and joints of meat which for decades have been the centre of their meals. Nevertheless, many British consumers have changed their dietary patterns over the last decade. For example, skimmed and semi-skimmed milk were hardly obtainable 10 years ago but do now account for nearly 40 per cent of all the milk consumption. Butter consumption has halved since 1970 and purchases of vegetable oils and reduced fat spreads are increasing. Meat is leaner, wholemeal bread and fruit juices have increased in popularity, and household sugar consumption has fallen substantially over the same period.

Recently Whichelow *et al.* (1991) have studied regional differences within the United Kingdom. Their findings confirm a North/South trend in relation to eating habits with a frequent consumption of fruit and vegetable products being much less common and several high-fat foods (chips, processed meats and fried food) more common in Scotland, Wales and the Northern part of England. In these regions there was a significantly lower frequency of the consumption of fresh fruit, fruit juice, 'brown' bread, pasta/rice, poultry, skimmed/semi-skimmed milk, light desserts and nuts, and a higher consumption of red meat, fish and fried food than in the South-East.

2.4.3 The British diet

The study of trends in the dietary intake of food and nutrients by the British population is undertaken by the Ministry of Agriculture, Fisheries and Food (MAFF) mainly through the National Food Survey (NFS), which is a continuous survey of household food purchases in Great Britain. According to the Ministry of Health of the United Kingdom (1992) this food survey currently demonstrates a largely satisfactory picture with respect to mineral and vitamin consumption, consistent with

the rarity of deficiency diseases. However, intakes of fat, saturated fatty acids, non-starch polysaccharides[1] (NSP), starch, non-milk extrinsic (NME) sugars, as well as of salt and potassium all differ substantially from those identified as desirable. Current intake of fat in Great Britain is around 42% of food energy compared to the Dietary Reference Value (DRV) of 35%. Saturated fatty acids represent 17% of food energy (DRV is 11%). The current average intake of NSP is 12 g/day (DRV 18 g/day). Fat consumption has been decreasing over the two past decades, which could be interpreted as a positive trend. However, if one calculates the percentage saturated fat energy, the improvement is not so impressive. By and large, people have been consuming less of the same things and saturated fat consumption has merely been falling in the line of total energy. The poly-unsaturated fatty acid (PUFA) content of the British diet has been changing in positive direction although it is still significantly lower than in many other countries (Ministry of Health United Kingdom, 1992).

2.4.4 Nutrition related diseases in the United Kingdom

According to the Ministry of Health (1992), coronary heart disease, stroke and lung cancer (all diet related illnesses) account for 36% of all premature deaths (those occurring before the age of 65 years) in The United Kingdom. In 1990 coronary heart disease accounted for some 26% of deaths and 23% of premature deaths. As in other European countries death rates have been declining since the late 1970s, although they remain the highest in the world. Cancers account for some 25% of all deaths.

Within the United Kingdom there are wide variations in the incidence of good health, illness and death between different parts of the country, different ethnic groups and different occupational and income groups. There is a 3 to 1 variation between the highest and lowest district death rates from coronary heart disease in men aged 35-64 years. Lower social classes especially experience a higher mortality rate. Death rates from coronary heart disease are also 30 percent higher in women aged 35 to 64 years who were born in the Indian subcontinent than in the population as a whole.

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[1]In the UK it has been decided to stop using the "dietary fibre" concept since the panel on dietary reference values of the committee on medical aspects of food policy have stated that it lacks precise definition and has been interpreted in many ways. NSP are the major fraction of "dietary fibre" whatever definition is used, are chemically identifiable and can be measured with reasonable precision (Department of Health and Social Security, 1991)

2.4.5 Nutrition policy in the United Kingdom

The main elements of current British food and nutrition policy are:

- to ensure the adequacy of a national diet in terms of quantity, quality and variety at affordable prices;
- to undertake research to establish a sound scientific basis for policy;
- to ensure authoritative expert advice to government;
- to undertake public education about diet and nutrition;
- to give support to health and other professionals;
- to provide information about individual foods including labelling; and
- to monitor trends in disease, health nutritional status and diet.

The government followed the initiative of the WHO creating a strategy to improve health in targets contained in 'Health for All by the year 2000', by producing a discussion paper entitled 'The Health of the Nation' which proposes a number of targets for health in England similar to those of WHO (Ministry of Health United Kingdom, 1992).

In the United Kingdom, government ideology is that individuals are responsible for their own diets, and for their own health; state responsibility is to enable individuals to make a well-informed food choice. The output of government nutrition policy is largely provision of information: labelling of nutrient content and broad usage on foods, and education of or information to the consumer to encourage appropriate purchase and/or consumption. Implementation of the 'individual's informed choice' strategy is done by three government departments. The Department of Health provides scientific information and advice. Guidelines for diet and health were published by the Health Education Council in 1983 (NACNE), and by the Department of Health and Social Security in 1984 (COMA). More recently, the Department of Health has produced new dietary reference values for food energy and nutrients for the United Kingdom (Department of Health and Social Security, 1991). The Health Education Authority turns these guidelines into public messages. It works closely with many partners at local and national level, including Health Authorities, local Authorities, and commercial and voluntary organisations. Specific activities of the Health Education Authority include:

- direct public education through booklets;
- developing materials for public education through schools, workplace, primary health clinics, the commercial sector and the mass media;
- 'Food for the Heart', a promotion in cooperation with retailers;
- information for professionals; and
- work with caterers, such as the Heartbeat Award Scheme.

How consumers can best understand complex information on diets, the influences on their choices and factors affecting these processes are the subject of a new research programme.

The Ministry of Agriculture, Fisheries and Food (MAFF) shares the responsibility with the Department of Health, The Welsh Office and the Scottish Office Agriculture and Fisheries department to ensure food is safe and wholesome for general consumption in Great Britain. MAFF has also developed a wide range of educational material.

Dowler (1993) expresses concern about the fact that nutrition policy in the United Kingdom has no relation with food entitlement and access. According to her no ministry or department has direct responsibility for matching consumer income and its related effective demand with food prices, nor control over strategies for siting and managing food stores. Policies which only promote the supremacy of the marketplace are not concerned with what people can get, nor how much they are able to spend.

2.5 The Netherlands

2.5.1 Background

The Netherlands has a population of about 15 million. The Netherlands is one of the most densely populated countries in the world. Agriculture is mainly focused on the export of so-called finished or processed products such as cheese, butter, eggs, bacon and vegetables. Other important products are condensed milk, milk powder, seed-potatoes, seeds for sowing, flower bulbs, poultry for slaughtering and tree nursery crops. It is the world's largest exporter of dairy produce, animal husbandry and horticulture (area under glass has doubled since the 1990's).

2.5.2 Food culture in the Netherlands

The Dutch daily have two cold meals and a cooked dinner. Dutch cold meals mainly consist of bread and dinner is often characterised by potatoes, vegetables and a piece of meat. However, younger people have started to eat more rice and pasta dishes for their evening meal. Compared to the other European countries the Netherlands has a low consumption of fish.

In the Netherlands 18% of the income is spent on food. Food supply in the Netherlands is not directed by nutritional principles. According to the Dutch government the consumer has prime responsibility to compose a healthy diet.

During recent years the food industry has developed and marketed several products for a more balanced diet. The greater part of these consist of low fat and low sugar products.

2.5.3 The Dutch diet

Current intake of fat in the Netherlands is around 37% of dietary energy (The Netherlands Bureau for Food and Nutrition Education, 1993). Since the seventies consumption of visible fat (*e.g.* margarine) has decreased whereas consumption of invisible fat has increased (*e.g.* cakes, crisps and sauces). Characteristic for the Netherlands is the high intake of dairy products compared to other European countries. In recent years consumption of low-fat milk products has increased. Meat consumption, and especially the consumption of pork, has increased. Although fish consumption has increased it is still low compared to other European countries. Potato consumption has been stable since the sixties but a shift has occurred in the consumption of processed potato products. A shift also occurred in bread consumption, from white to wholemeal bread and there has been an increase in the consumption of luxury rolls and croissants. Fruit and vegetable consumption has also increased considerably (Graaf *et al.*, 1993)

To collect information on food consumption and consumption patterns and the state of nutrition in the Netherlands, a system of nationally representative food consumption surveys has been set up to provide regularly detailed information (Netherlands National Food Consumption Survey). This survey was first carried out in 1987-1988 and has been repeated in 1992. Compared to the guidelines for a healthy diet, the consumption of total fat (esp. saturated fat) and monosacharides is too high and the consumption of polysaccharides and dietary fibre is too low (Ministry of Health, Welfare and Cultural Affairs, 1992). However, comparing the outcomes of the food consumption survey of 1992 with the survey of 1987-1988, there is a positive trend regarding the energy percentage of fat which is decreasing.

2.5.4 Nutrition related diseases in the Netherlands

As in most other European countries, health problems in the Netherlands due to imbalanced macro-nutrient consumption are far more widespread than the problems caused by microdeficient deficiencies (Ministry of Health, Welfare and Cultural Affairs, 1992).

Hospital morbidity of ischaemic heart disease has increased with 132% between 1975 and 1986 which is related to the high intake of saturated fat. Prevalence of hypercholesterolemia is 19% for men aged 20-60 and 16% for women aged 20-60. For the same age groups the prevalence of hypertension for men is 9% and for

women is 6%; prevalence of obesity for men is 7% and for women 9%. The estimate of new patients with diabetes mellitus in 1990 was 21 per 10.000 inhabitants.

Hospital morbidity figures for cancer per 10.000 inhabitants are for lung cancer 9.9, for breast cancer 8.6, for colon cancer 3.9, for prostate cancer 3.8, for stomach cancer 2.5 and for pancreas cancer 1.5.

The possible relationship between fat consumption and colon, prostate and breast cancer together with the strong relationship between the intake of saturated fat and ischaemic heart disease is especially relevant in the Netherlands. International comparison shows that the percentage of dietary energy of fat in the Dutch diet belongs to the top 10 of the World (Dutch Nutrition Council, 1990).

2.5.5 Nutrition policy in the Netherlands

In the Netherlands the food and nutrition policy is a joint responsibility of the Ministry of Welfare, Health and Cultural Affairs and the Ministry of Agriculture, Nature Management and Fisheries. The nutrition policy is designed to provide a sound supply of food stuffs and to promote healthy eating habits. Sound supply refers to control of safety, quality and microbiological contamination of food. The promotion of healthy eating habits includes promoting the dissemination of information concerning a healthy diet by means of consumer education and education in general, particularly in schools, and encouraging the industry to take account of the dietary aspects of its product policy and its advertising and labelling practices.

In 1984 the National Nutrition Council prepared the report 'Food and Nutrition Policy in the Netherlands (Ministry of Health, Welfare and Cultural Affairs, 1984). The Nutrition Council, formally an advisory body set up by the government with responsibilities and powers in several sectors, has chosen, as its first priority, reduction of total fat and saturated fat consumption (Dutch Nutrition Council, 1991).

Although the government recognises vulnerable groups they still have chosen to direct nutrition promotion to the entire population. Vulnerable groups in the Netherlands are:

- people with a low socio-economic status; with a lower income food consumption becomes more frugal, the diet less varied, more fatter meat, and less vegetables and fruit are consumed;
- ethnic minorities; families in principle maintain their traditional consumption patterns. Often the diet of foreign children is more according to the guidelines than the diet of Dutch children. It contains less fat and more carbohydrates. The intake of most minerals and vitamins is lower;

- infants; at present 75% of parents choose breast-feeding their babies; and
- elderly people; problems for the elderly are accessibility to shops, income, physical and mental health and the social network.

In the field of nutrition many organisations are active. To mention a few of them:

- The Netherlands Bureau for Food and Nutrition Education;
- Dutch Nutrition Council;
- The Netherlands nutrition foundation (professional associations, interest groups and food trade);
- The steering committee on healthy nutrition, which is a cooperative with representatives of trade, industry, consumers, health educators and government; and
- The Netherlands information centre for food sensitivity.

2.6 France

2.6.1 Background

France has a population of about 57 million. The main sources of living are agriculture and industry. France is the largest wine-country of Europe and is West Europe's foremost producer of agricultural products, chiefly cereals, beef, sugar beet, potatoes, grapes and dairy products. France is an important EEC-producer of milk, butter and cheese. Animal production is scattered over the whole country (cows, pigs, sheep and poultry).

2.6.2 Food culture in France

Most French people start the day with a simple breakfast, which consists of a piece of bread, butter, probably some marmalade and a cup of coffee, tea or chocolate. Lunch and dinner are hot meals and much more elaborate. Potatoes and other starches are considered as vegetables. Therefore meat or fish is combined with either vegetables or staples. The dessert consists of a dairy product, like yogurt, soft cheese or custard, or fruit.

In the seventies Henri Gault and Christian Millau started to promote the 'nouvelle cuisine'. They proposed several rules which became the characteristics of modern cooking: shorten cooking times (especially for vegetables), eliminate too much fat and banish the roux sauce.

The French have a reputation for self-satisfaction about their diet, which is not supported by the French Centre for Food and Nutrition Research. As in other countries consumption of bread and potatoes is less than half of what it was 50 years ago; consumption of sugar has doubled. In the 1970s, fats amounted to around 42 per cent of total energy intake in the average French diet. The level of saturated fats is also too high in France. Furthermore, the French seem to eat more fresh meat than any other nation in the European Community (Cannon, 1992).

France, due to the diversity of its countryside and to the variety of its agricultural production, has shown over preceding centuries great regional differences which have given birth to different 'cuisines'. This has contributed to the fame of 'French gastronomy'. In the past there was a 'butter France' corresponding to the north of the country and an 'oil France', corresponding to the South, and especially to the southeast. This phenomenon has lessened, but differences still exist.The Mediterranean region, in contact with Italy, has dietary habits similar to it: the consumption of olive oil, pasta, and tomatoes is noticeably higher than in the rest of France. The North and East consume much more potatoes than the rest of France and these regions have dietary habits very similar to those of their neighbours, Belgium and Germany (Dupin *et al.*, 1984). Besides these regional differences, differences between urban and rural areas exist. When towns become bigger the energy percentage of fat increases and the energy percentage of carbohydrates decreases. The energy percentage of protein varies little. Food consumption differs also among social categories. It is interesting to note that these differences are mainly related to social-professional classes and not to income (Hercberg *et al.*, 1985).

2.6.3 The French diet

INSEE (Institut National de la Statistique et des Etudes Economiques) conducts an inquiry into food consumption among 10.000 households annually. The following data are obtained from this investigation.

Bread consumption and consumption of potatoes has decreased by more than half in France between 1925-1980. The consumption of pulses has also decreased. The consumption of fruit and vegetables has increased strongly. The decreased intake of cereals and increased use of more refined products has caused a decreased intake of fibre. The increased intake of fruit and vegetable consumption can not compensate this reduction (Dupin *et al.*, 1984).

Although consumption of sugar as such has decreased, consumption of the total amount of sugar has increased. Brunet (1984) notes that the growing intake of sugar was caused by an increased consumption of sweetened products, such as biscuits, sweets, chocolate, sweet dairy products (desserts) and sweet drinks.

Consumption of protein increased strongly in the course of the last 60 years. This has been caused by an increased intake of meat. In the last 50 years meat consumption doubled, but has remained stable since 1980. A weak increase in fish consumption was observed. Egg consumption has increased. Consumption of dairy products decreased for a couple of years, but has risen again since 1974. This new interest in dairy products is the consequence of the increased consumption of milk and the variety in the number of dairy products. Consumption of vegetable protein has decreased due to a decreased intake of bread, cereals and pulses (Hercberg *et al.*, 1985).

Fat consumption can be distinguished in consumption of visible fat, like butter and oil, and consumption of invisible fat, which is incorporated in other products. Fat consumption has increased by 60% between 1934-1977 (Brunet, 1984). In 1980, daily consumption was 155 grammes a day, which is 42 energy percentage from the total consumption. This increase is mainly due to the increased intake of animal products, like meat, sliced meat ('charcuterie'), cheese, cakes, luxury bread ('viennoserie'), biscuits, chocolate and other products which are highly industrialised. These products contain fat which is mainly saturated.

Consumption of invisible fat (incorporated in other products) has strongly increased and represents 2/3 part of the total quantity of consumed fat. Consumption of visible fat has increased as well, but more moderately. Consumption of gravy and soup has decreased. But deep fried products and salad with vinaigrette are consumed more frequently. Consumption of oil and butters has increased as well, but has stabilised since 1980.

The average wine consumption decreased from 127 grammes in 1960 to 98 grammes in 1978. The consumption of beer, aperitives and spirits increased.

2.6.4 Nutrition related diseases in France

Compared with other European countries France has a lower incidence of cardiovascular diseases and this picture is mainly seen in the Southern part of France (Ministry of Health France, 1992). Since France has relatively high intakes of fat and more especially of saturated fatty acids and cholesterol this is a strange phenomenon also referred to as the 'French paradox' (Sadler, 1995). Many hypotheses have been generated to find an explanation in connection with a search for foods or dietary components that may protect against coronary heart disease. Most popular has been the idea that wine plays a protective role. Sadler (1995) stresses however, that due to differential reporting, the figures in France are not so uniquely low but are comparable with rates in other Southern European countries such as Spain and Italy. She also states that it has been proven that wine can play a protective role, but that it has also some adverse effects such as high mortality rates

from liver cirrhosis and a high rate from cancers especially of the mouth, oesophagus and larynx which is characteristic for the mortality pattern of France.

Social class differences in mortality and morbidity have also been found in France. A higher mortality in unskilled workers was found which was primarily due to cancer, cirrhosis and accidents (Fox, 1989).

2.6.5 Nutrition policy in France

Since France has a lower incidence of cardiovascular diseases the government has been less concerned about nutrition policy than other European countries. Nutrition policy in France is mainly focused on safety and quality and less on prevention of nutrition related diseases. During the International Conference on nutrition in Rome the French Ministry of Health reported that they were planning to encourage nutrition education for the youth (Ministry of Health France, 1992).

2.7 Spain

2.7.1 Background

Spain has a population of about 39 million. In 1936 it was led into civil war and a fascist dictatorship by Franco. Since 1978 there has been a move towards local government autonomy with the creation of 17 self-governing regions. Tourism is of great importance for the Spanish economy. Spain has a traditional agricultural economy gradually being supplemented by various industries. The main agricultural products are cereals, potatoes, sugar beets, olives and citrus fruits. Spain also has many vineyards. The livestock consists of cows, pigs, poultry and mainly sheep; then there are the bulls for fighting. Along the coast fishing is important.

2.7.2 Food culture in Spain

The diet of the population in Southern Europe, particulary those living in the Mediterranean areas, is characterised by a higher consumption of fish, olive oil, vegetables and fruit and by a lower consumption of meat and animal fat compared to other European countries (Buzina *et al.*, 1991).

The Spanish start the day with a cold breakfast and eat their main hot meal in the afternoon. At the weekends especially, this 'lunch' is an important occasion in the day and families often eat together or go to a restaurant. Between breakfast and

lunch the Spanish often eat a sandwich or snack. The evening meal is also a hot meal but is lighter, *e.g.* a soup or some tappas (small snacks).

In the 1960s the Spanish diet was based on bread, potatoes, pulses and rice, which accounted for 45% of the total intake, vegetables and fruits 19%, dairy products 13,3%, meat fish and eggs 10%, wine 7,8% and oil 3,7%. Since then the Spanish diet has rapidly been changing. Despite differences between regions, Serra-Majem *et al.* (1993) have found that during the period 1964-1991 there was

- a remarkable decrease in the consumption of bread, pulses, potatoes, pasta and rice (*i.e.* all foods rich in complex carbohydrates);
- an increase in the consumption of all meats (particularly pork and poultry), fish, milk, and cheese (*i.e.* the consumption of saturated fatty acids has increased);
- a rise in the consumption of vegetable oils and margarine and a decrease in intake of olive oil;
- a noticeable rise in the consumption of fruits and vegetables;
- a fall in wine consumption; and
- a fall in sugar intake (to about 80 gr/person/day).

2.7.3 The Spanish diet

As stated before, the Spanish diet is evidently ideal in many respects; it is rich in cereals, fresh vegetables and fruit, and fish; and contains very little saturated fat and little sugar. Until recently, that is. Average fat consumption in Spain has increased from 30 percent of the total number of calories in 1964, to 40 per cent in 1981; and consumption of all sorts of fatty and sugary food is increasing fast (Moreiras-Varela, 1989).

Studies on the food consumption pattern which were carried out in Spain have shown that about 20 years ago the main sources of dietary energy were very close to the existing recommended dietary allowances but have changed recently so that energy from fat increased from 30 to 40% of the total dietary energy and the energy from carbohydrates was reduced from 60 to 48% of the total energy. There has also been a substantial increase in meat consumption followed by an increase in the consumption of milk and dairy products as well as in egg consumption. The consumption of vegetables has also increased. In more recent years fish consumption has been reduced, whereas a downward trend in pulse consumption has recently been reversed as the result of an educational campaign (Buzina, *et al.*, 1991).

2.7.4 Nutrition related diseases in Spain

A diet low in saturated fats and relatively high in carbohydrates, fibre and vitamins may be one of the reasons why most Mediterranean people experience a lower incidence of cancer (Berrino and Muti, 1989). Indeed the whole lifestyle in the Mediterranean countries is preventive of cardiovascular diseases (Moreiras-Varela, 1989).

2.7.5 Nutrition policy in Spain

A nutrition policy in Spain is not yet fully developed. In 1990, the State Protection of Consumer Office established a Nutrition Programme. The goals of this programme are:

- to improve satisfactory dietary habits among the Spanish population; and
- to provide an adequate amount of healthy food (Carretero and Gutierrez, 1992).

The Health and Food Ministries promote the consumption of food which is overproduced in the country such as citrus fruits, certain kinds of fish and olive oil. The Ministry of Health distributes booklets to schoolchildren and the Spanish Nutrition Foundation publishes information on the advantages of eating pulses, fatty fish and milk (Moreiras-Varela, 1989).

2.8 Summary and discussion

Denmark and the Netherlands are smaller countries than Spain, France and the United Kingdom. In the latter countries more regional differences exist. People living in the South of the United Kingdom for example, tend to eat healthier than people living in the North. Each of the five countries has specific dietary characteristics. Consumption of olive oil, fish and pulses is highest in Spain. France has a high consumption of meat. People living in the Netherlands have a higher consumption of milk and milk products, the Danish have a sweet tooth (higher consumption of sugar) and the British tend to eat more meat of sheep (see figures 2.2 to 2.6). Similarities between the countries are a decreased consumption of staple foods (see figure 2.7) and an increased consumption of vegetables and fruit since 1960 (see figure 2.8 & figure 2.9).

Looking at the various figures it is remarkable that for several products the differences between the countries are narrowing. This might be due to the free market and an increased trade within Europe. There are several positive trends such as an increase of the consumption of vegetables and fruit. Fat intake, although decreasing in some countries, is still a main concern. In all five countries fat intake

is still too high and fibre intake is too low. General guidelines for healthy nutrition in the five countries are similar except for some minor differences. In the Netherlands, Denmark and the United Kingdom, the food industry has reacted to the concern about fat intake which resulted in an increased development of low-fat foods.

The countries can be divided in two comparable groups for general diet characteristics, diet related diseases as well as for the development of nutrition policy. The first group includes Denmark, the Netherlands and the United Kingdom, the second group includes Spain and France. The latter has a higher consumption of fruit and vegetables whereas the first group has a higher consumption of fat and sugar. There is also a clear gradient of coronary heart disease mortality across Europe from high in the North to low in the South (Sadler, 1995). However, all countries have the problem of social inequalities: higher death rates are associated with lower socio-economical groups. This social gap seems to be widening.

Since the United Kingdom, Denmark and the Netherlands have higher rates of cardiovascular disease (see figure 2.10) they have been more active in the field of developing nutrition policies. Slow development of nutrition policies in Spain and France is also related to the fact that the Spanish, but especially the French are very proud of their diet and are quite convinced that they have a healthy diet. Nevertheless there have been North-South as well as South-North influences and trends are coming together. Southern European traditional food has mainly influenced the Northern dietary patterns by way of providing certain 'concepts' of food rather than actual commodities; in that way the Italian pizza and Spanish paella have successfully migrated North. The migration from the North to the South, however, has been in the form of 'commodities', meat and milk in particular (Helsing, 1993). This has resulted in an increase of consumption of fat and saturated fat and a decrease of consumption of carbohydrates in Southern Europe.

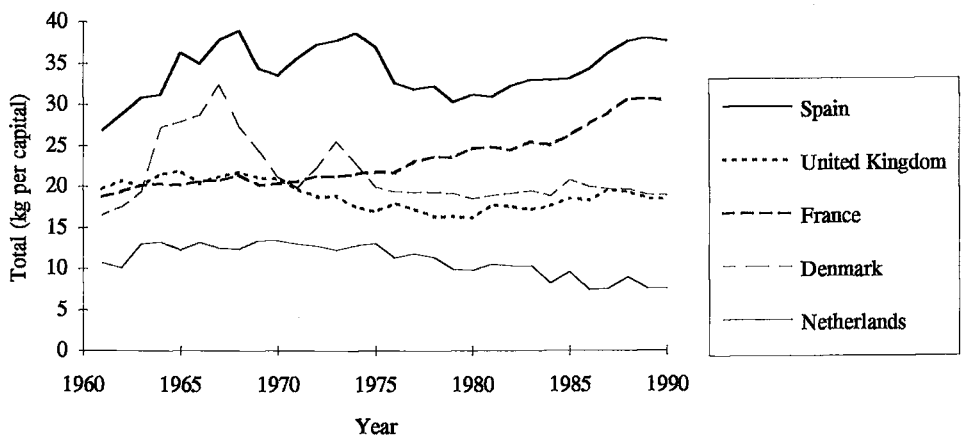

Figure 2.2 Fish, seafood & products and aquatic products (WHO, 1995)

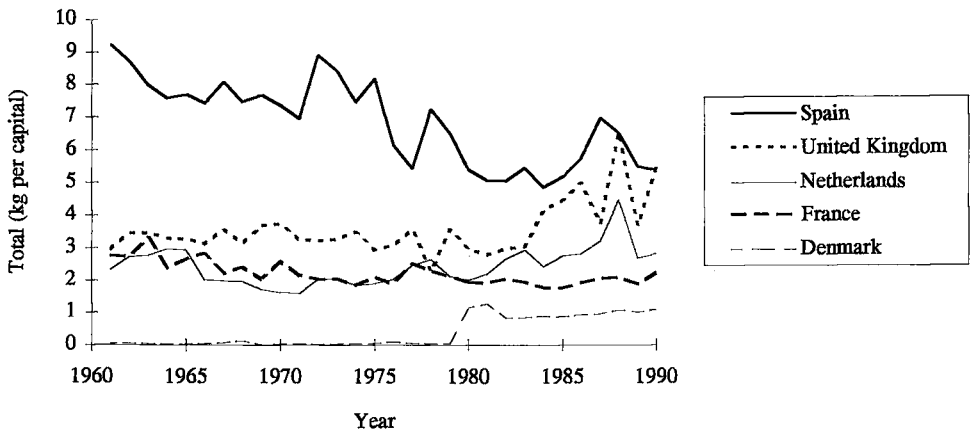

Figure 2.3 Pulses & products (WHO, 1995)

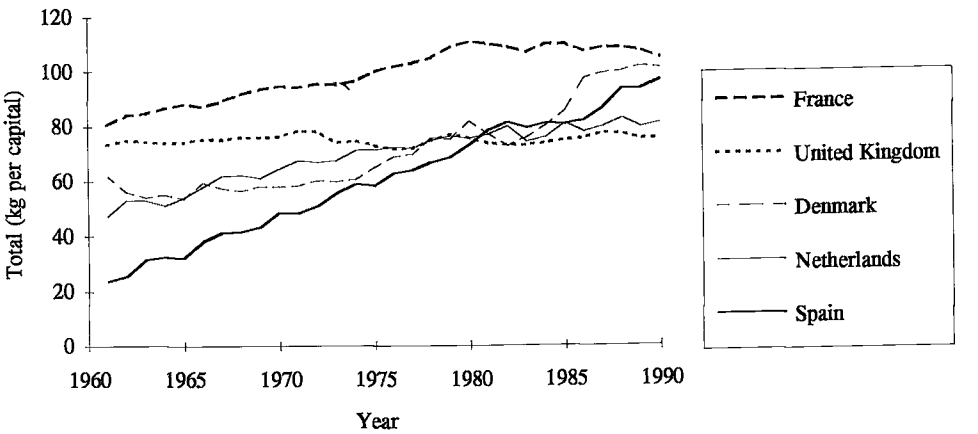

Figure 2.4 Meat and offals (WHO, 1995)

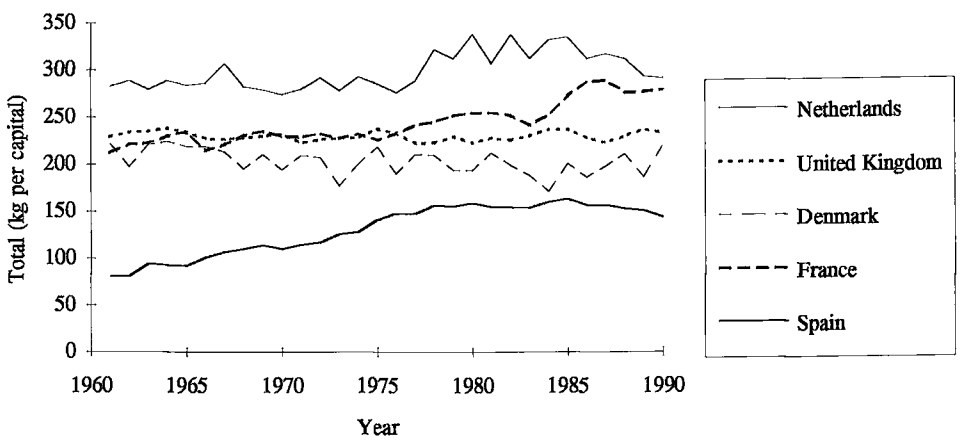

Figure 2.5 Milk & products (excl. butter) (WHO, 1995)

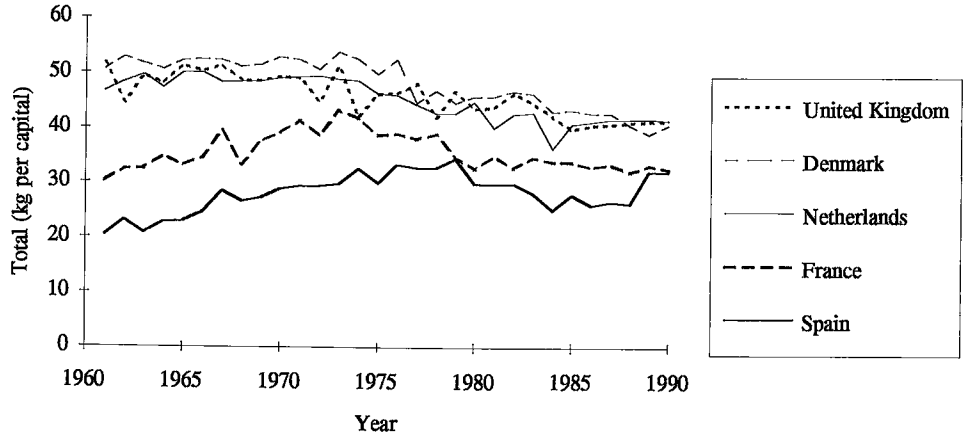

Figure 2.6 Sugar, total (raw equiv.) (WHO, 1995)

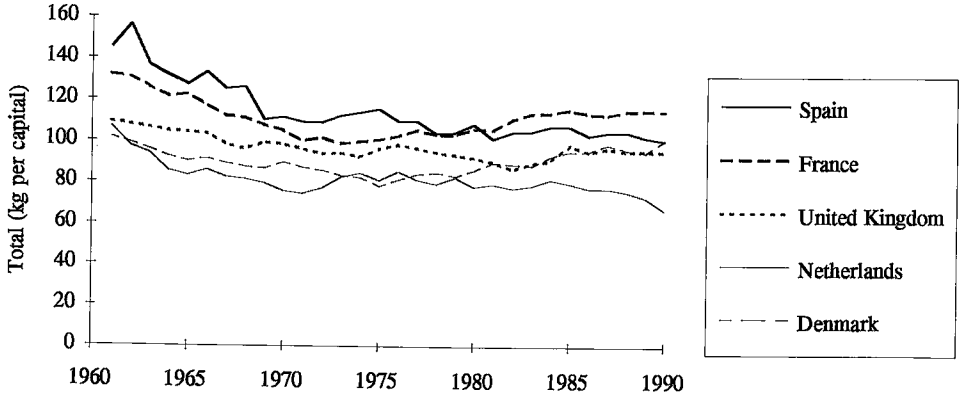

Figure 2.7 Cereals & products (excl beer) (WHO, 1995)

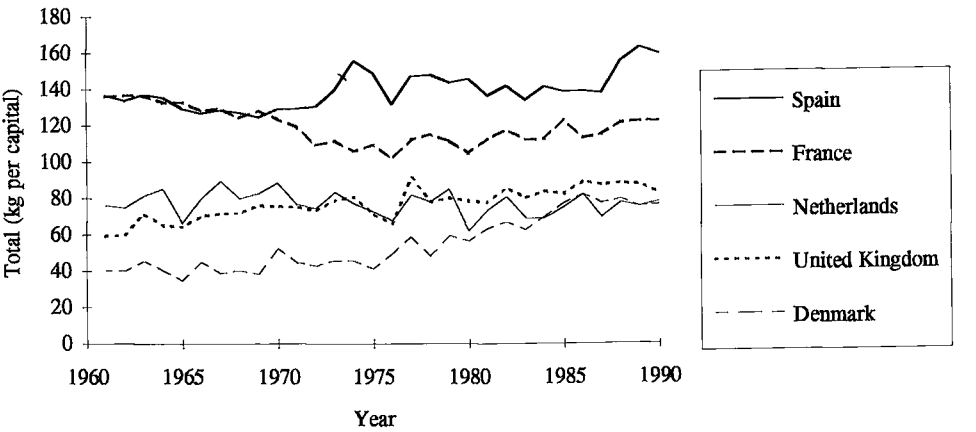

Figure 2.8 Vegetables & products (WHO, 1995)

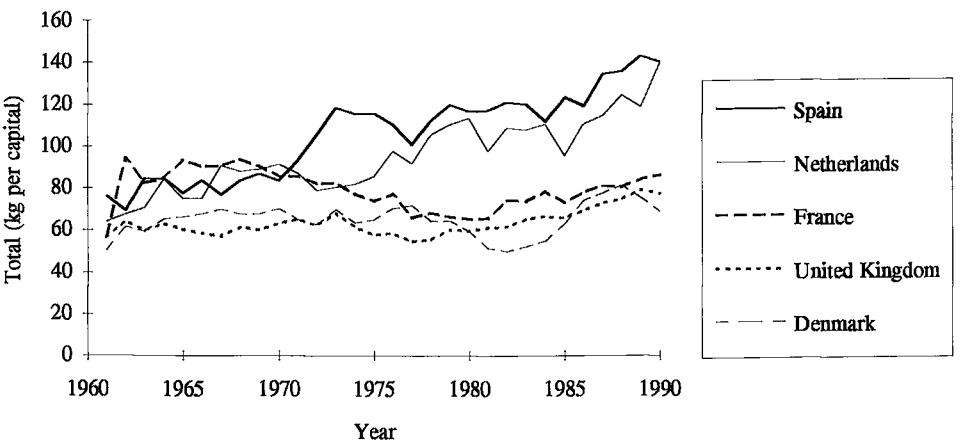

Figure 2.9 Fruits & products (excl. wine) (WHO, 1995)

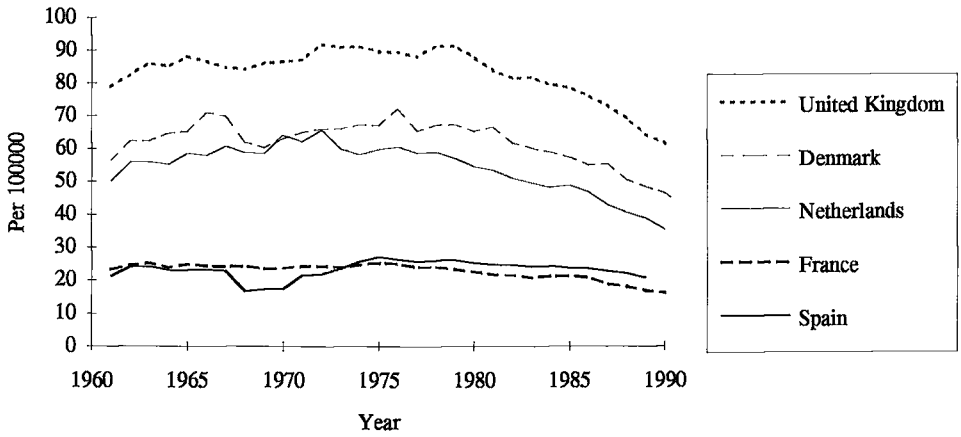

Figure 2.10 SMR ischaemic heart disease, 0-64 yrs (WHO, 1995)

For a nutrition policy on a national level within the five countries involved in the SUPER project two factors seem to be important: on the one hand a sound supply of food stuffs and on the other hand promotion of healthy eating habits. The first factor is well taken care of in the five countries whereas the second leaves much to be desired. Among other things this is due to the fact that food manufacturers and farmers dominate the nutrition policy and for them quantity is often more important than food for health.

Better nutrition among the population can be achieved by influencing markets and structures by law and regulation or by trying to change the attitude and behaviour of the individual consumer with information and education. Most governments are in favour of the politically and economically less costly means: trying to influence nutritional behaviour through information supply. An important argument for the 'individual's informed choice' strategy is that governments of these countries are of the opinion that individuals are responsible for their own diets. Making structural changes such as development, subsidies, pricing and marketing support of 'healthy' products is politically and economically more risky and politicians tend to avoid this risk. Changing markets and structures could certainly succeed in protecting the individual and might make it easier to choose a healthier way of life. A danger of involving bureaucratic institutions is that they have the potential of becoming authoritarian and making rigid structures that suppress people. Freedom and education on the other hand overlook the problem of market power and its strong impact, in spite of health information. Marketing and price structures counteract information, especially for the less educated and those with less command over their

life patterns (Jensen, 1993). Since neither solution will ever be fully successful it is best to find the right balance between these two strategies.

3 Factors influencing food preferences and choice

3.1 Introduction

Food supply used to keep us busy for a large part of our lives and has played a major role in evolution. Historically food consumption patterns were affected by the availability of food in the immediate environment. Agricultural methods, advancing technology and social organization reduced the role of availability as the key determinant in food selection. This was further modified by the development of personal tastes and by the development and increased consumption of 'culturally desirable foods'. The main characteristics of the food system today, compared to the situation fifty years ago include:

- a much greater variety of raw foods, originating from many parts of the world;
- a greater array of cooking styles and foods from different cultural traditions, and more restaurants and food outlets for different cuisines, with changes in these cuisines to accommodate local tastes;
- increased diversity of prepared foods: canned, frozen and dried;
- a substantial reduction in the availability of locally grown products;
- greater standardization in varieties of agricultural products, and increased homogenization of foods in different regions within a country; and
- at the same time, there is also an increased interest in the revival of local cuisines and regional dishes (Pelto & Vargas, 1992).

These changes together with a growing concern over the role of diet in the etiology of the so called 'nutritional diseases of affluence' show the need for a greater understanding of various human food selection determinants and their interaction. An understanding of these factors is essential in identifying effective methods or strategies to promote the improvement of nutritional habits.

In the previous chapter an attempt has been made to elaborate on what is perceived as a diet most optimal for health. The present-day dietary situation in the countries involved in the SUPER project is for a great deal unsatisfactory and therefore governments have started to implement strategies which aim at improving dietary habits. It may be assumed that an increased knowledge of appropriate nutrition

results in a change of attitudes and thus in the desirable dietary changes. On the whole, there is evidence of public awareness of the role of diet in health (see for example Lloyd *et al.*, 1993; Holm, 1993), but this awareness has not led to improved eating habits. On the one hand this could be caused by not understanding how to improve a diet or by misconceptions about dietary factors. Auld *et al.* (1994) found in their study about the knowledge of Americans about fat and cholesterol that many misconceptions still exist such as 'saturated fats have more calories than unsaturated fats' which they see as a barrier for an appropriate change. On the other hand nutritional behaviour is a complex one and therefore considering nutritional knowledge only is insufficient to explain dietary behaviour. Many researchers tried to find individual, social, cultural or economic explanations or developed conceptual models or used existing models and applied or tested them in the field of nutrition. Each of these researchers examined nutritional behaviour from a different perspective which is often related to the background of the researcher concerned. Nutritionists seem to be interested in individual nutritional knowledge related to health aspects, sensory researchers in taste, texture, appearance and smell, social psychologists in attitudes and social norms, anthropologists in culture and so on. Prättälä (1991) states that a multidisciplinary approach to studying food choice is difficult because views differ widely amongst people with different educational backgrounds and often are opposing. Nevertheless, she emphasises the need to narrow the gap.

In the following paragraphs different perspectives and conceptual models will be discussed. Although each of them has its own characteristics they all have some kind of overlap. Strong and weak points of these approaches or models will be put forward and it will be explained how these insights can be used for nutrition promotion.

3.2 The sensory perspective

The sensory evaluation includes appearance, taste, smell, feeling and temperature. Smell and taste especially seem to play an important role. Humans have a genetically determined bias to accept sweet tastes and reject bitter ones. The biological significance of these biases is that sweetness predicts energy and bitterness predicts toxicity. In addition, humans have the tendency to be suspicious of unknown food but at the same time display a curiosity about it. These principles assure continuation of the consumption of familiar foods for the supply of the necessary nutrients and energy while they protect against poisoning by unfamiliar foods. According to Fitz & Douglas (1992) this causes consumer reluctance to reduce sugar intake and adopt and consume new and healthier foods. In general, however, acceptance or rejection of a sensory attribute will be food-specific, *e.g.*, a certain level of bitterness is desirable in tonic water or coffee. Such associations will be learnt by the individual through exposure to foods within a particular family and a particular culture.

Although there will be certain agreement on the appreciation of attributes in particular foods and people might agree on the preferred level of that particular sensory attribute, there are still large differences between individuals in their liking or preference for particular food or for the level of a sensory attribute in that food. Another difficulty in studying the role of sensory factors is the fact that victuals are eaten in combination causing the taste components of each food item to interact. In this context Shepherd (1989) states that it is neither the physical/chemical properties of the food, nor the perception of these, which determine liking, but preferences of the individual for certain types of sensory attributes in a type of food.

Examining food choice from a sensory perspective is useful in measuring reactions to food stimuli, and other responses, such as craving for specific nutrients. Experience of the taste sensation may increase its attractiveness. Krondl (1990) argues that, although the sensory perspective facilitates the development of understanding the link between food and biological determinants of food acceptance it is, however, not appropriate to identify the individual's attitude to food.

Although sensory models do not give a complete understanding of the determinants of food choice, it is clear that sensory attributes such as taste and smell play an important role. Insights from sensory research can therefore help to make healthy food attractive and tasteful so that consumers are interested to try these alternatives.

3.3 The anthropological perspective

Cultural determinants, such as the values and symbolic meanings people attach to food, have traditionally received little attention from nutrition researchers. Among other social anthropologists, Murcott (1988) has provided descriptions of the meanings attributed to food in various cultures and the relationship of those meanings to social forces. In contrast with the sensory approach, the main argument of anthropologists is that appetite or desire for food can be viewed as socially and culturally constructed. Murcott (1992) argues that the discussion about obstacles to change has overlooked the significance of cultural perceptions of food and eating and especially the symbolic aspect of those perceptions. Anthropologists have examined these issues in 'foreign' cultures, but rarely have explored this in their own societies. As an example Murcott elaborates on the 'cooked dinner' of the British which according to her symbolizes 'the home itself, a man's relation to that home and a woman's place in it'. Caplan (1993) stresses that gender and power differences are symbolized, exaggerated and embodied in many cultures by means of eating - what food is appropriate for men, what for women and how much, as well as who eats first and last, and who serves whom.

Although there is great diversity between cultures, a number of characteristics applicable to all cultures might be identified (Fieldhouse, 1986):

- culture is a learned experience: it is not biologically determined and therefore can be modified. It is a group phenomenon, not an individual one and in absence of socialisation processes it could disappear.
- culture involves change: food habits are part of a dynamic process and although they are basically stable and predictable, at the same time they are, paradoxically, undergoing constant change;
- culture resists change: food habits too are resistant to change;
- people are, one the whole, unaware of their cultural patterns so that most people behave without reasoning why; and
- culture has a value system: amongst the substances accepted as food by a culture some are labelled 'good' and some 'bad'. 'Bad' foods are sometimes greatly in demand such as junk foods and chocolate.

In addition to the above characteristics every culture has its symbols understood by the group, emphasizing specific activities, and providing interaction between people in a socially acceptable way (Fieldhouse, 1986).

The anthropological perspective offers several clues to understand why changing nutritional behaviour is so difficult and suggests why it does not have to be rational. People often eat what they eat simply because 'that's what they are used to'. For nutrition promotion this implies that it might be important to try and make the automatic nutritional behaviour a more conscious one by engaging consumers in the discussion about the background of food choice. Another implication of the anthropological insights is that one cannot expect dietary habits to change from one day to the next and that focusing on health only is too restricted.

3.4 The social-psychological perspective

Compared to the anthropological perspective the socio-psychological perspective puts more emphasis on the individual characteristics explaining behaviour. Three social-psychological theories which have been applied to explain nutritional behaviour are the theory of reasoned action, the health belief model and the social learning theory. These are described successively.

3.4.1 The theory of reasoned action

In recent years many studies have been trying to measure social-psychological factors influencing food choice (*e.g.*, Contento & Murphy, 1990; Towler & Shepherd, 1992; Stafleu, 1994). One of the most popular theories is the theory of

reasoned action proposed by Ajzen & Fishbein (1980) which is designed to study attitudes affecting behaviour. This theory is based on the notion that an individual's conscious intention to perform some behaviour is the best predictor for that behaviour. This behavioural intention in its turn is predicted by two factors: the person's attitude towards the behaviour and the subjective norm.

The attitude to the behaviour is based on a person's opinion about the results of that behaviour (behavioural beliefs) and on an evaluation of that result, in terms of good or bad, harmful or beneficial, etc. For example, if an individual knows that eating chocolate bars will make him or her fat, but is not at all concerned about getting fat, then this belief is unlikely to exert much influence on this persons's behaviour.

The subjective norm is the social pressure perceived by the individual to behave in a particular way. The subjective norm is predicted from a set of normative beliefs about whether the individual thinks specific other people (*e.g.*, relatives, friends) would prefer him or her to perform a specific behaviour. The normative beliefs are modified by how much the individual wants to comply with the wishes of these other people (motivation to comply).

Several researchers who have used the theory of reasoned action to explain food choice, reported that attitude and subjective norm are found to be good predictors of individual intention to choose a certain food item. While some of these researchers find that the attitude component has greater predictive power than the subjective norm (Shepherd & Stockley, 1985; Saunders & Rahilly, 1990) others (Lloyd *et al.*, 1993) find that the subjective norm measures appear to be better predictors of intention than the attitude component. Lloyd *et al.* (1993) explain this difference by the fact that some have studied attitudes with a view to dietary changes in the future whereas other studies went into present dietary behaviour. They argued that dietary changes over a period of time are more governed by peer pressure and other outside influences than present dietary behaviour.

Ajzen and Fishbein (1980) have stated that it is important to carry out precise measurements but that this is difficult. Putting the terms into operation needs to be done with great care and many researchers have not applied the theory correctly. These methodological inadequacies might have influenced the findings. The use of this model in the field of nutrition is even more complicated because the quality of an individual's diet is made up by combinations of food rather than by the consumption of particular food. The quality of a diet is a result of a set of behaviours rather than one behaviour.

It is important to note that the theory is related to rational behaviour ('reasoned' action). One can ask oneself if food choice is rational behaviour (Krondl, 1990) a question which has been put by several anthropologists as well (*e.g.*,

Fieldhouse, 1986). This could mean that nutritional behaviour must first be made a more conscious behaviour, which has also been suggested in the previous paragraph.

The theory of reasoned action does not pay attention to the perceived ease or difficulty of preforming a specific behaviour. Ajzen & Madden (1986) developed the theory of planned behaviour which was an extension of the theory of reasoned action (see also Ajzen, 1988). It suggests that the individual's belief regarding the difficulty of carrying out the behaviour (perceived control) is also predictive for behaviour. Lloyd *et al.* (1993) included the measure 'perceived control' in their study and found that together with attitude and subjective norm it was predictive for the intention of British consumers to make changes in their diet.

3.4.2 Health Belief Model

The Health Belief Model suggests that the engagement in a particular action is a function of the perception of the relationship between a behaviour and illness, the seriousness of the illness, and the particular costs and benefits involved in the engagement. A final influence on the uptake of behaviour is the presence of cues to action. Demographic and social psychological variables might affect an individual's health motivations and perceptions, but are not considered to be direct causes of health action (Janz & Becker, 1984; Rosenstock, 1990).

Thus, individuals might more likely adopt a low fat diet if they are aware of the health consequences of a high fat diet and consider themselves vulnerable to heart disease. Associated with such a risk assessment is their belief that the recommended diet will actually reduce the risk of heart disease. The benefits perceived relate particularly to the long-term health benefits; that is, avoiding heart disease. The costs might be more immediate, and include changing cooking methods, eating less favoured food, perhaps even an increase in the cost of shopping. Cues for action may include continued health warnings and advertising emphasizing the health aspect of any product, labelling food as low or high fat content and so on (Bennett & Hodgson, 1992).

3.4.3 Social learning theory

A theory which meets some of the shortcomings of the theory of reasoned action is the social learning theory, also referred to as the social cognitive theory (Bandura, 1986). This theory has also been used to explain nutritional behaviour (Lewis *et al.*, 1989). The theory assumes a dynamic interaction between personal factors, environmental factors and behaviour. It recognizes the importance of the cognitive function which the theories described above do as well, but additionally there is an emphasis on the role of environment (reinforcement or contingencies) in changing or

maintaining behaviour. According to Bandura (1986) behaviour is a result of all influences simultaneously. Key-concepts of the social learning theory are: observational learning, self-efficacy/self-control, success or failure experiences in the past, reinforcement and the role of environment (Perry *et al.*, 1990).

The concept **observational learning** refers to learning behaviour by observing the behaviour of others (Bandura, 1977). When people see that a certain way of behaving has positive consequences, then they might copy that behaviour. Incentive or motivational factors play an important role in this process. Bandura asserts that people must believe that the rewards associated with the model's actions hold for them as well and that these outcomes are worth the relative costs of response. Unless both these conditions are met, observational learning may not lead to the modelled behaviour. 'Role models' are often used in advertising on television or other media to promote certain products or behaviour. For example, alcohol consumption is over-represented on television. This may suggest that alcohol consumption is not only acceptable, but that the consequences are beneficial, thus encouraging alcohol consumption.

The notion of **self-efficacy** according to Bandura (1986) is the conviction that one can successfully execute the behaviour required to produce the outcomes required. In other words, self-efficacy means whether people think they are capable of acting in a certain way. People develop a sense for estimating how effective they are with certain tasks, in certain settings, and with certain people. Self-efficacy is being influenced by observational learning and success or failure experiences in the past.

Reinforcement is especially important in changing behaviour. Positive incentives may motivate behaviour change and positive feedback may reinforce behaviour. According to Bandura (1986) the anticipation of rewards increases the possibility of engagement in desired behaviour. In other words learning is stronger when based on rewards rather than on punishment.

An internal set of beliefs can affect behaviour which in turn has an impact on the **environment**. Then the environmental consequences provide feedback to further influence the person's self-image. The interaction between person, behaviour, and environment is seen as a continuous reciprocal interaction, whereby each affects the other two and is in turn affected by them. What one does has consequences on the environment, which are then perceived as evidence of some aspects of people themselves as agents of those consequences. Based on this theory Lewis *et al.* (1989) developed a model that incorporated factors for social environment, reinforcement, behaviour modelling, knowledge and attitude related to the frequency of consumption of four beverages (whole milk, low-fat milk, soda and diet-soda). For all four beverages the model explained 35% or more of the variance in frequency of consumption.

These theoretical insights have not only been used to explain behaviour but also to change behaviour. In the North Karelia project (Puska *et al.*, 1985), a heart disease prevention programme, attention was given to appropriate modelling, suppressing counter-arguments, modifying social norms, and providing skills necessary for change. Environmental changes were made to enhance or maintain behaviour change; for example, shops were encouraged to promote healthy food.

For health promotion programmes these theories, or part of these theories, could be used for planning at an organizational, environmental and individual level. In this way these theoretical insights have also been used for elements of the SUPER project.

3.5 Food acceptance and food choice model

The last few years several people have tried to develop models or schemes explaining nutritional behaviour, often including internal (*e.g.*, beliefs) and external (*e.g.*, sensory attributes of food) factors. Amongst others, Krondl (1990) and Shepherd (1989, 1990) reviewed several models trying to explain nutritional behaviour. A number of these models are discussed in this paragraph. In some models food acceptance is used as a starting point whereas others use food choice as a starting point.

3.5.1 Food acceptance models

As early as 1957 Pilgrim defined food acceptance as 'the consumption of food accompanied by pleasure', and proposed a model with three components: physiology, attitude and sensation. Two components 'physiology and attitude' determine the decision to put food into the mouth, and following this, the decision to ingest is influenced by what is perceived when food is actually in the mouth, the so-called 'sensation'. The physiological cues include hunger and appetite. Attitudes and ideas about foods have been learned from the environment (Pilgrim, 1957). The inclusion of the environment in Pilgrim's model is interesting, a disadvantage is that few details are given of the elements that constitute each of the three interacting components.

Booth & Shepherd (1988) related food acceptance to the food itself and the individual's perception of it. The factor 'food' includes brand attributes and composition which are influenced by cultural norms, majority purchasing patterns and economic factors. An individual's perception of the eating occasion is influenced by personality, values, beliefs, habits, emotions, likings, physiology and personal norms. These two factors together, this food and how it is perceived, are decisive

for acceptance or rejection of this food. Acceptance or rejection of food consists of food choices, choice of portion size and choice of timing and frequency.

This is still a simple way of presenting food acceptance and Khan (1981), for example, has proposed a much more complex model (see figure 3.1). He distinguished 7 factors influencing food preferences: personal factors (*e.g.*, moods and emotions), biological, physiological and psychological factors (*e.g.*, age, sex), extrinsic factors (*e.g.*, advertisement), intrinsic factors (*e.g.*, food texture), cultural, religious and regional factors (*e.g.*, beliefs and tradition), educational factors (*e.g.*, nutritional education) and socio-economic factors (*e.g.*, income). All these variables are presented as influencing food preferences which would then be expected to influence food selection. These variables are also presented as interrelated.

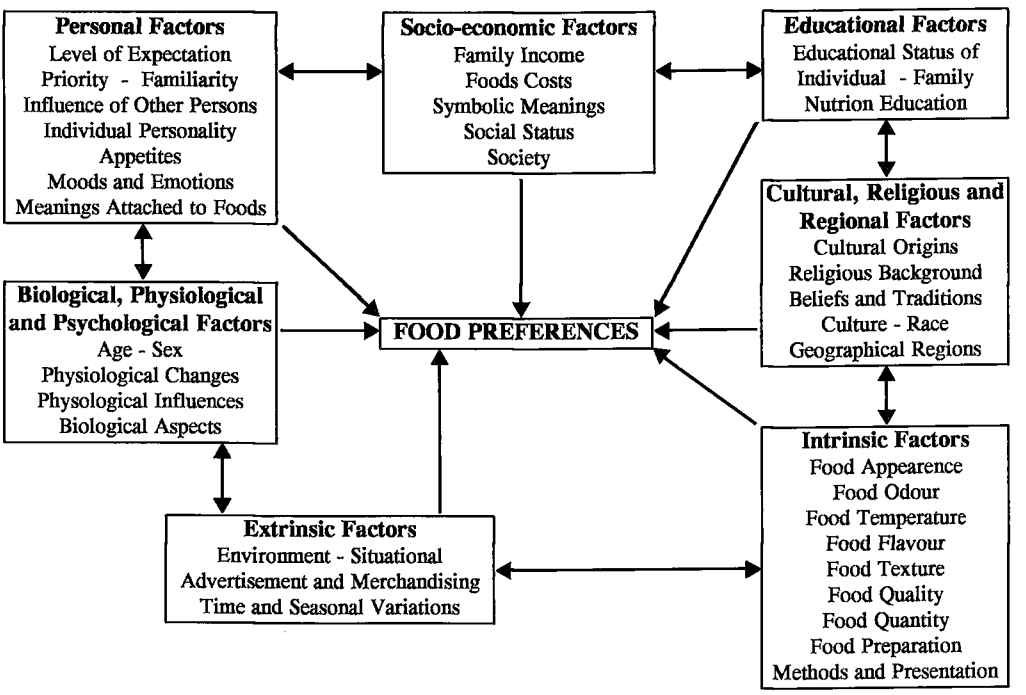

Figure 3.1 Khan's model of factors influencing food preferences (from Khan, 1981, reproduced by permission of CRC Press, Boca Raton, Florida)

3.5.2 Food Choice models

Shepherd (1985) developed a food choice model presented in figure 3.2. He divided the factors influencing food choice into those related to food, to person and to

economical and social conditions. Elements related to food are chemical and physical composition which have physiological effects following ingestion. Hence consumption of high-energy food will lead to satiation and this will lead to an almost immediate reduction in subsequent food consumption. Besides, he includes the psychological differences between individuals, such as personality, which may affect food choice in his model. Part of this effect might be through differences in the lifestyles of different personality types. Similarly he argues that different levels of education and knowledge about nutrition, food, preparation, etc. will lead to a different use of food. Differences between individuals in previous experience and learning associated with food will lead to differences in beliefs, values and habits concerning particular food. Moreover, certain food might be considered appropriate for one occasion and not at all for another. External to both the individual and the food are the general, social, and cultural environment. The availability, including how convenient buying food is, the price and aspects such as packaging, advertising and marketing will all have an influence.

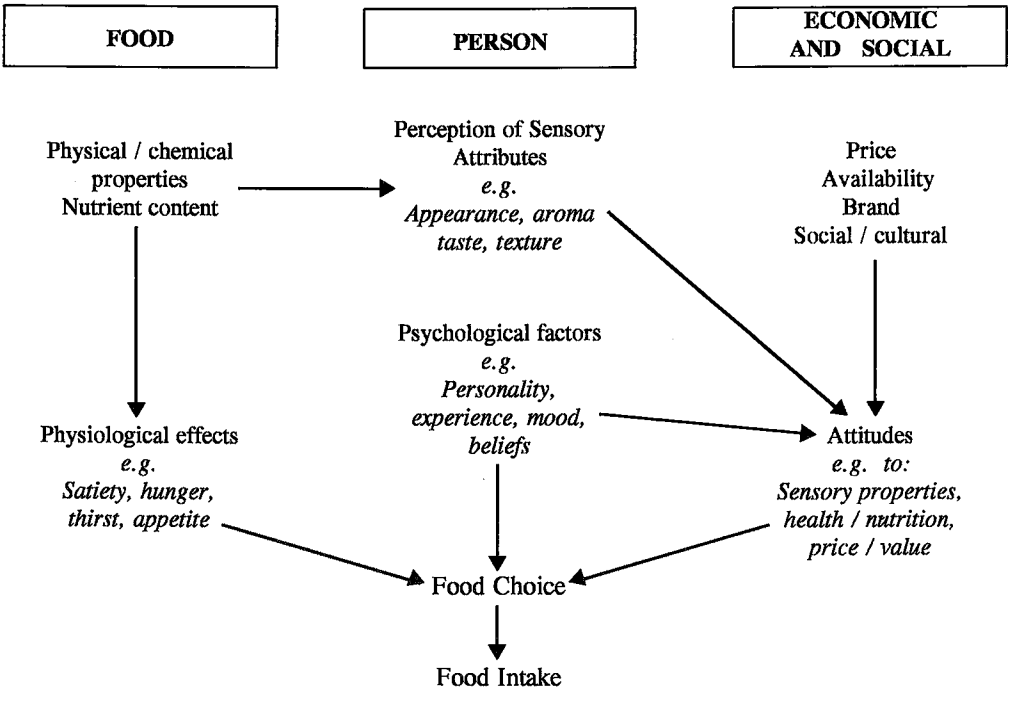

Figure 3.2 Factors influencing food choice (from Shepherd & Stockley, 1985, reproduced by permission of Stockton Press, United Kingdom)

According to Shepherd (1989) differences in age, sex, social class, region of residence, degree of urbanization will all lead to differences in food consumption. These differences may operate through some of the other variables described above. Many of the variables will be interrelated and their effects are difficult to distinguish. Food choice is not a constant phenomenon but will change according to different circumstances and different individual experiences.

Another food choice model is the Ecological model which is presented in figure 3.3 (Jerome *et al.*, 1980). In this model individuals are centred within their physical and social environment. This model assumes that food choice is affected by the social and physical environment, social organization, culture and technology. All these factors interact which each other. The physical environment establishes the conditions for food production. Technology and its development influence food production and distribution. Examples are convenience food and the impact made by changes in the composition of food in response to health concerns. Another type of technological advance is found in the world of information transfer (*e.g.*, television, cable). Access to food is affected by the social organization, that is the many economic and political structures. This means, for example, that when purchasing power is limited, access to food is affected and sensory and health motives become secondary considerations in food choice. The social environment is primarily responsible for the education of individuals and could affect their belief about food but according to the model beliefs are also affected by the culture in which individuals live. This model has a stronger emphasis on the environmental impact and perceives food choice more as a result of external factors than of individual ones.

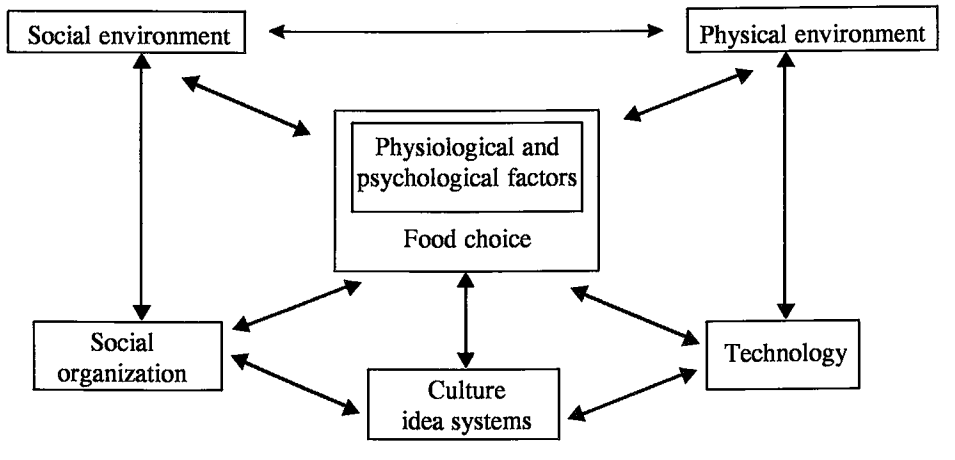

Figure 3.3 Ecological model (after Jerome, *et al.*, 1980)

The food perception model of Krondl and Lau (1982) is designed for application in situations where food is available, and economically accessible to the individual consumer (see figure 3.4). According to the designers, the model incorporates the main components of the sensory, attitude and ecological models. It can be seen as three arms addressing the questions why, who, where, and linking them to the central issue of food choice. The arm designated as 'why' refers to food perceptions which include components found in the sensory and attitude models. The second arm representing the question 'who', identifies persons in terms of their specific biological needs such as those due to heredity, sex, age, health, and activity. In addition, psychologic individuality is addressed. The third arm 'where', relates to the physical and social environments within which the food choice occurs. The physical environment refers to the place and time of food choice, while the social environment encompasses the social and cultural norms influencing the individual's relation to food. In addition, economic status falls within the social category of variables.

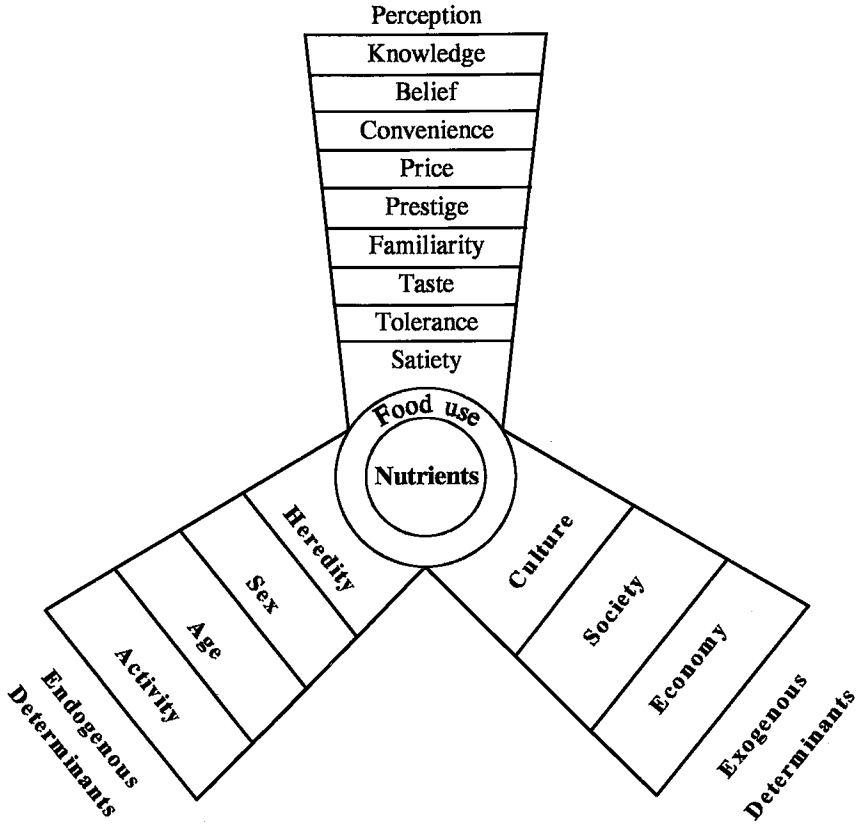

Figure 3.4 Krondl and Lau's (1982) framework for the study of food selection

When planning nutrition promotion programmes, these models or schemes can be used to verify which factors can be influenced (*e.g.*, beliefs and environments) and which cannot (*e.g.*, biological factors). Attempts have been made by several researchers to assess the weight of one or more of these factors separately. Measuring knowledge and attitudes in isolation has been very popular and this is obvious because these factors are easier to measure than, for example, culture or environmental influences. It would be ideal if one could quantify the relative importance of different factors since this would be helpful for people working in the field of nutrition promotion to know where to put their emphasis. Since so many factors are involved, which all interact as shown in the description of the models, this type of research is methodologically very difficult and includes the danger of explaining only part of the picture. It seems to be more suitable to try and work on several factors at the same time, since the combination is probably stronger than the factors taken separately. Furthermore, attempts could be made to take certain factors such as culture and tradition into account when planning form and content of nutrition promotion activities.

3.6 Summary and discussion

Obviously, food choice is influenced by many factors. The answer to the seemingly simple question 'why do individuals and population groups eat what they do?' is to be found by a complex decision-making process. The problem of answering this question arises because the choice of food is food or food component specific and it involves a multitude of factors. Most people would probably feel that they are fairly free to choose their own diets, and most people would be surprised to learn the constraints that are limiting their choices. As illustrated in this chapter, various models of food choice processes have been proposed over the years. Some have emphasised internal motivation, other have concentrated on environmental factors. In this chapter food choice has been discussed from several disciplines such as anthropology, social psychology, nutrition science and sensory research. Each of these theoretical insights, viewpoints and models has contributed to an understanding of the factors which shape food choices, at the same time leaving many questions unanswered. Furthermore, since food choice behaviour is a dynamic process these insights are constantly developing. As Fieldhouse (1986) argues, it seems unlikely that the multitude of factors influencing food choice can be codified in a single paradigm. The combination of insights results in a rich picture which could be helpful in planning nutrition promotion programmes.

As Zimbardo and Leippe (1991) stress, one wonders whether it is true that thoughts and feelings are always expressed in actions and whether all actions automatic feed back to affect internal states. Often behaviour is instinctive or automatical which has also been stated in the paragraph about culture. Behaviours could be changed directly

without first changing internal processes and, similarly, some attitudes and beliefs could be changed without showing up in relevant changes of behaviour.

Where dietary changes are introduced there is the probability that other aspects of social life will also be affected. A corollary to this is that changes in dietary behaviour might be brought about, not by direct modification of food habits, but by alteration of the material or non-material culture (Fieldhouse, 1986).

Applied to the SUPER project the issues discussed in this chapter show that it is important to focus on a combination of factors influencing food choice; not only the individual, but also environmental and social influences. Factors related to the individual include knowledge, attitudes and beliefs. Besides focusing on these factors one should also try to influence cultural aspects and beliefs and try to make the social environment support the necessary change (reinforcement). Environmental factors such as availability of food need to be influenced as well.

4 The systems perspective of health promotion

4.1 Introduction

Under the wing of preventive medicine, health education was advocated in many countries in the early 1970s. Rather than just treating patients, it was believed that improvements in health would arise from promoting lifestyles conducive to health. Health education at that time involved individual behaviour-modification techniques and was seen as a form of treatment (Davies & Kelly, 1993). The individual was simply regarded as a 'receiver' of health information and was expected to act according to the health messages. Practical experience and several studies showed that information and knowledge are important but not sufficient factors in behaviour change. The wider socio-economic and environmental factors also affect health. Individuals cannot be isolated from their material and social context (Ashton & Seymour, 1988; Koelen, 1988). Health education without taking the broader context into account has therefore been criticized as 'victim-blaming'. This led to a revised consideration of social models of health and a shift occurred from health education to health promotion.

Two different health promotion perspectives were developed: health education and the systems perspective of health promotion. In the first perspective the individual is still most important whereas the second has its main emphasis on the environment in which the individual is an important 'source' as well as a 'receiver'.

In this chapter these different interpretations of health promotion are further elaborated on to substantiate why the systems perspective of health promotion was chosen to work with rather than the health education perspective. Within the field of agricultural extension there has also been a major shift in thinking (Röling, 1992; Leeuwis, 1993; Engel, 1995). Many present-day viewpoints are similar to those in the field of health promotion. The alternative approaches in agriculture resemble ideas presented by the system advocates of health promotion. These will be discussed because they have been influential on the SUPER project. Both movements put great emphasis on the role participation can play in sustainable agriculture or positive health. This chapter explores why participation is believed to be important and what it means in practice for the SUPER project. Finally four case studies of community based health promotion projects are presented as examples and learning experiences up to date.

4.2 The agricultural knowledge system

Within the field of agricultural extension there has been a major shift in thinking. The conventional model assumes that researchers generate knowledge which is transferred by extensionists to the farmers. This transfer-of-technology model has been criticized mainly because the model does not consider farmers as experimenters and technology developers but as passive receivers of expertise from the outside. In recent years, however, alternative approaches different to the transfer of technology model have drawn a great deal of attention (Röling, 1988). Instead of promoting the transfer of ready-made technologies, the emphasis is on building on farmers' capacities to access external information when they need it, on developing farmers' ability to experiment and draw conclusions, on enhancing farmers' individual and collective ability to take sound decisions, and on empowerment. In this context Chambers and Jiggins (1986) state that an important approach to developing agriculture is to assist farmer experimentation by:

- creating networks of experimenting farmers as platforms for reaching consensus about problems for research, and for discussion of experimental design and its results; and
- by training farmers to set-up and draw conclusions from experiments. This approach has been called participatory technology development.

Overall, the emphasis is on facilitation and perceiving farmers as equal partners. Thus an important aspect of the intervention is to create a shared perspective on the problem and help develop a decision-making capacity to deal with it. According to Röling (1994) this is perhaps the most distinguishing characteristic of facilitation (see figure 4.1).

Item	Transfer of technology	Facilitation
Criterium variable	adoption, knowledge utilization	Ownership of problem. quality of decision-making, convergence
Model of farmer	individual adopter client, target	Independent, strategic actor, capable of expertise, knowledge generation and exchange, local group process
Philosophical foundations	Science is the basis of truth	Consensus is the basis of truth. Reality is socially constructed

Figure 4.1 Characteristics of the transfer of technology perspective compared to the facilitation perspective (adapted from Röling, 1994)

The knowledge and information systems (KIS) perspective has emerged as a result of a large number of 'formative experiences' (Röling, 1992) of applied social scientists who tried to come to grips with the complex phenomenon of facilitating innovation, mostly in agriculture (Engel, 1995). The main advantage of the system approach is that an emphasis is placed on the wholeness of the phenomena. Instead of reducing the whole to its constituent elements, systems thinking emphasizes the properties that emerge when one looks at it as a whole (Checkland, 1981). Having a knowledge systems perspective means, briefly, that farmers and their organizations, extension services, technology developers, experiment stations, research institutes, policy makers, administrators, and private commercial companies and consultants are considered elements of a system. The actual composition of this system depends upon the set of actors relevant to the given situation. A knowledge system is defined as:

> 'the articulated set of actors, networks and/or organizations, expected or managed to work synergically to support knowledge processes which improve the correspondence between knowledge and environment, and/or the control provided through technology use in a given domain of human activity' (Röling, 1992).

As problem solving occurs at different levels there is a need for interaction and possible management of these processes. Obviously, integration between these levels through consensus building and constructive conflict is an important goal of knowledge management to improve the outcome of the system. That the application of the systems perspective and the question of how to facilitate the knowledge and information processes is also relevant in the health field is explored in the following paragraph.

4.3 Health promotion

The term 'health promotion' has come to refer to a movement which has been gathering momentum in the 1980s. The movement is believed to be a radical one since it attempts to challenge the medicalization of health, stresses its social and economic aspects, and portrays health as having a central place in augmenting human life (Downie *et al.*, 1990). Health promotion is currently highly fashionable in professional and political circles which is reflected in a great number of books and publications within this field. As described in chapter 1 the movement was a result of a shift in thinking about health and its general improvement. Whereas there used to be an emphasis on the individual to process information transferred to them by health educators, after which it was expected that individuals would act accordingly, it was recognized that individuals cannot be isolated from their material and social environment and that a single behaviour cannot be isolated from its context (Koelen, 1988). In other words, health promotion represents at the very simplest level, whether one adopts a structuralist or individualist approach to health, a strategy for

promoting in some positive way, the health of whole populations (Macdonald & Bunton, 1992). Definitions of health promotion abound but ultimately in all of them it is accepted that both individual (lifestyle) and structural (socio-economic and environmental) elements play critical parts in any health promotion strategy.

Ashton & Seymour (1988) defined five principles of health promotion based on work of people who had been active in this field since 1974:

- it actively involves the population in settings of everyday life;
- it is directed towards action on the causes of ill-health;
- it uses many different approaches. These include education and information, community development and organization, health advocacy and legislation;
- it depends particularly on public participation; and
- health professionals have an important part to play in nurturing health promotion and enabling it to take place.

These principles also underlie 'The Ottawa Charter for Health Promotion' (WHO *et al.*, 1986) which stresses the necessity to:

- build public policies which support health;
- create supportive environments;
- strengthen community action;
- develop personal skills; and
- reorientate health services.

Agreement about the principles, however, does not mean that there is just one way of putting them into practice. According to Green & Raeburn (1990), two theoretical and sometimes ideological perspectives on health promotion can be contrasted. The first emphasizes personal and small group decision making, psychological factors, and health education methods. The second emphasizes political and sociological or 'system' factors in health. To show how these perspectives differ they will now be further elaborated on.

4.3.1 The health education perspective of health promotion

According to Frankish & Green (1994) health promotion has grown out of the disciplines and professions of health education, epidemiology, sociology, social psychology, social work, political science, economics, and nursing among others, but also out of lay-initiated social movements such as the women's movement, the self-help movement, and the wellness and holistic health movements. The view

Frankish and Green present about health promotion is linked to the health education point of view. They use the following definition of health promotion:

> 'any combination of educational, organizational, economic and environmental supports for actions conducive to health' (Green & Kreuter, 1990).

In other words, it involves educating the public concerning risk factors and then making changes in the environment to facilitate healthy choices of behaviour. Thus, individual lifestyle change is still the starting point of this perspective. The approach is based on the identification of a finite number of life-style areas, such as smoking, alcohol, abuse, diet, and exercise, shown to account for the major causes of disease and disability in society. These behavioral risk factors can be quantified and specially targeted for strategic planning using the combination of supports as described in the definition above. In this interpretation health promotion is used as a means to reach the targets set by professionals.

The definition of WHO which defines health promotion as

> 'the process of enabling individuals and communities to increase control over the determinants of their health, and thereby to improve their health'

is much more policy-oriented. This WHO concept of health promotion is informed by a sociological perspective that sees health and lifestyle as inextricably linked to the social and economic environment, and acknowledges the social nature of the movement for health (Kickbusch, 1986). Farrant (1991) argues that this definition is often in conflict with many publications of WHO which still reflect the influence of the top-down model. As an example she refers to the document 'Health Promotion in Action: Practical ideas on programme implementation' jointly produced by the WHO Regional Office for Europe and Heartbeat Wales (WHO, 1987). She emphasizes that the standard WHO definition (see above) sits uncomfortably alongside the interpretation of community involvement in this document that emphasizes mobilization of community resources in support of top-down defined programmes.

4.3.2 The systems perspective of health promotion

Some critics of the health education approach of health promotion advocate a system view. A community system is made up of various subsystems or sectors, individuals, and the interrelationships among them. The subsystems of a community system include the political sector, the economic sector, the health sector, the education sector, the communication sector, the religious sector, the recreational sector, the social and welfare sector and the voluntary and civic groups (see figure 4.2). The advocates of the system view argue that interventions only aimed at changing the behaviour of individuals are inadequate and too appealing to

conservative governments; it allows them to evade their responsibility for social change. It also tends to lead to a brand of health promotion most suitable for the middle class and to charges of victim blaming. From the systems perspective, change in one sector usually implies that adjustments or responses also have to occur in other parts of the system (Thompson & Kinne, 1990).

<table>
<tr><td>System level</td><td colspan="5">Community</td></tr>
<tr><td>Inter-relationship level</td><td colspan="5">Coalitions,
Advisory boards, Networks</td></tr>
<tr><td rowspan="2">Subsystem level</td><td>Political sector</td><td>Economic sector</td><td>Health sector</td><td>Education sector</td><td>Religious sector</td></tr>
<tr><td>Communication sector</td><td>Recreational sector</td><td>Social welfare sector</td><td>Voluntary groups</td><td>Other community groups</td></tr>
<tr><td>Individual level</td><td colspan="5">Individuals in a community</td></tr>
</table>

Figure 4.2 Schematic of a community as a system (Thompson & Kinne, 1990)

The systems perspective of health promotion is comparable with the systems perspective used within the field of agricultural extension. In 1990 Koelen & Brouwers already indicated the knowledge systems perspective (KIS) is also useful in the field of health promotion since the health sector is a knowledge intensive one as well. Within the health sector many individuals and institutions are active at different levels and as indicated in figure 4.1 the whole can be viewed as a system. For the SUPER project is was decided to work according to the systems perspective of health promotion since it was felt that it was more in the line of the Healthy Cities principles than the health education perspective. Working according the systems perspective does not mean that no attention is being paid to the individual. The individual is viewed as an essential actor within the system.

In a KIS, a differentiation between 'downstream' and 'upstream' flows of knowledge and information can be made. Downstream flows refer to information flows from the scientific subsystem towards the public, whereas upstream flows refer to information flows from public towards science. For a KIS to operate effectively, knowledge and information must circulate between the subsystems. However, in the health sector, as in other domains such as the previously described agricultural sector, downstream transfer is dominant over upstream influence. Effective health promotion as well as sustainable agriculture therefore asks for active involvement of the population. What is needed is an interactional approach, with active sharing of information, dialogue with the target population, and participation in decision making. Since participation is assigned such an important role, the meaning of the concept will now be further explored.

4.4 Participation

According to Rahnema (1992) the word 'participation' and 'participatory' appeared for the first time in the literature about developing countries, during the late 1950s. Social activists and field workers in developing countries, started to attribute most of the failures of development projects to the fact that populations concerned were kept out of all processes related to their design, formulation and implementation. They therefore started to advocate participatory methods of interaction as an essential dimension of development. Since that time there has been a variety of interpretations of the concept of participation.

Coming out of the social planning movement of the late 1960s, Arnstein (1971) developed an eight-rung ladder of participation (see figure 4.3) as a classification of different levels of participation.

8	Citizen control	degrees
7	Delegated power	of
6	Partnership	citizen power
5	Placation	degrees
4	Consultation	of
3	Informing	tokenism
2	Therapy	non
1	Manipulation	participation

Figure 4.3 Ladder of participation (Arnstein, 1971)

At the bottom of the ladder are manipulation and therapy forms, described as 'non-participation' for which the real objective is not to enable people to participate in planning or conducting programmes, but to enable powerholders to 'educate' or 'cure' participants. Rungs 3, 4 and 5 are informing, consultation and placation and progress to levels of what Arnstein calls 'tokenism'. Further up the ladder are partnership, delegated power and at the top, citizen control referred to as 'degrees of citizen power'.

Besides giving a degree of participation this ladder is also normative by implying that being high on the ladder is better than being at the bottom. This can be gathered from the names of the different rungs, *e.g.* the concept manipulation has a negative connotation whereas partnership has a positive connotation. That Robertson &

Minkler (1994) are of the same opinion is clear when they argue that 'much of the current health promotion practice, although using the rhetoric of participation, in fact operates on the bottom and middle of this ladder when professionals attempt to get the people in the community to take ownership of a professionally defined health agenda'.

Pretty (1995) also distinguished different degrees of participation but his descriptions are more free from value judgements. According to him there are at least seven different types of participation:

1. passive participation: people participate by being told what is going to happen;
2. participation in information giving: people participate by answering questions posed;
3. participation by consultation: people participate by being consulted, and external agents listen to their views and may modify their idea of problems and solutions in the light of people's responses;
4. participation for material incentives; people participate by providing resources, for example, labour, in return for cash or other material incentives;
5. functional participation: people participate by forming groups to meet predetermined objectives related to the project, which can involve the development or promotion of externally initiated social organization;
6. interactive participation: people participate in joint analysis, which leads to action plans and the formation of new local institutions or the strengthening of existing ones; and
7. Self-mobilization: people participate by taking initiatives independent of external institutions to change systems. They develop contacts with external institutions for resources and technical advice they need, but retain control over how resources are used.

As Rifkin *et al.* (1988) describes it is not possible to give one definition of participation since it depends on local context and issues. Participation is a dynamic process and it is impossible to develop a universal model for managing participation. A definition of participation can also change with time. In a situation where people are working together, it is important that all participants clarify in the beginning of the process what they consider as 'participation', who they think should be involved and why. During the process it is essential to reflect on what is happening and why and to adjust if necessary. Besides clarifying the specific application of participation, better ways of shifting from the more common passive, consultive and incentive-driven participation towards the interactive end of the spectrum should be identified (Pretty, 1995).

Pretty (1995) argues that for interactive involvement of people a number of common principles are important. They are:

- a defined methodology and systematic learning process: the focus is on cumulative learning by all the participants and, given the nature of these approaches as systems of inquiry, their use has to be participative;
- multiple perspectives: different individuals and groups make different evaluations of situations also leading to different actions. All views of activity or purpose are heavy with interpretation, bias and prejudice, and this implies that there are multiple possible descriptions of any real-world activity;
- group inquiry process: all involve the recognition that the complexity of the world will only be revealed through group inquiry. This implies three possible mixes of investigators, namely those from different disciplines, from different sectors, and from outsiders (professionals) and insiders (local people);
- context specific: the approaches are flexible enough to be adapted to suit each new set of conditions and actors, and so there are multiple variants;
- facilitating experts and stakeholders: the methodology is concerned with the transformation of existing activities to try and bring about changes which people in the situation regard as improvements. The role of the 'expert' is best thought of as helping people in their situation carry out their own study and so achieve something. These facilitating experts may be stakeholders themselves; and
- leading to sustained action: the inquiry process leads to debate about change, including confronting the constructions of others', and this debate changes the perceptions of the actors and their readiness to contemplate action. This leads to more sophisticated and informed constructions about the world. The debate and/or analysis both defines changes which would bring about improvement and seeks to motivate people to take action to implement the defined changes. Action is agreed upon, and implementable changes will therefore represent an accommodation between the different conflicting views. This action includes local institution building or strengthening, so increasing the capacity of people to initiate action of their own.

Within the SUPER project two types of participation are believed to be important for the long-term improvements: community participation and intersectoral collaboration. Since these concepts mean different things to people working in the field of health promotion they will now be further expanded on to clarify the approach within the SUPER project.

4.4.1 Community Participation

After an initial popularity the concept community participation has been criticized by many researchers. Farrant (1991), for example, argues that in many projects 'community participation' has more often been used as 'community manipulation'.

According to her, health professionals were adopting the language of community development without internalising the principle of community control over a definition of health needs and solutions. Grace (1991) discusses the problems related to the word 'empowerment'. She argues that since professionals are required to develop, plan, and evaluate 'deprofessionalized, community-based' behaviour programmes one can wonder whose initiative it is to develop, plan and evaluate. Although the discourse attempts to position the community as being 'in control', being the initiator, there is still an external agent in a background role that has controlling implications. These critiques are both related to the understanding of the idea of community participation.

Rifkin *et al.* (1988) suggest the following definition of community participation: 'Community participation is a social process whereby specific groups with shared needs living in a defined geographic area actively pursue identification of their needs, take decisions and establish mechanisms to meet their needs'. Although this definition covers many elements of what participation could be, one could wonder, especially in the European situation, if people living in a geographically defined area have 'shared needs'.

Hawe (1994) has made a useful division of three possible interpretations of what a community is. The first one is 'lots and lots of people' or community as a population. This explanation is used in large scale community interventions with the idea to reach as many people as possible and make best use of scarce programme resources. The North Karelia project (Kottke, *et al.*, 1984; Puska, *et al.*, 1985) and The Stanford Three Community project (Farquhar *et al.*, 1977; Fortmann *et al.*, 1981) are examples of this approach. The second approach is the interpretation of the community as a setting with aspects of that setting being used as tools to support and maintain individual behaviour. In this approach, organizations, groups and key individuals in the community are valued because of their capacity to translate the campaign into the local culture and to finally take over control so that the desired outcomes are continued, made routine, and diffused. To bring about this cooperation and facilitation it is required to 'organize' the community. Examples of this approach are the Lifestyle 2000 project (Scott *et al.*, 1992) and 'Healthy Bergeijk' (Assema, 1993). The third approach which Hawe describes is the community as a social system or as an 'ecosystem with capacity to work towards solutions to its own community identified problems'. Here the job of health promotion intervention is to harness and enhance the natural problem-solving and helping processes in the community. In the last section of this chapter all three interpretations of community participation will be illustrated by case studies.

The approach within the SUPER project lies somewhere between the second and the third interpretation. The initiative to promote healthy eating by applying health promotion principles was initially put forward by health professionals. It is an attempt to search for solutions to decrease the prevalence of nutrition related

diseases. However, after raising awareness and initiating community debate the initiative is more about facilitating solutions brought forward by the community.

4.4.2 Intersectoral collaboration

Another form of participation is intersectoral action. One of the key issues of health promotion is that health cannot be ensured by the health sector alone. It demands coordinated action of government, other sectors, non governmental and voluntary organizations, local authorities as well as industry and the media (WHO *et al.*, 1986). Their potential role in promoting public health has to be identified so that together they can achieve a common aim. This is what is meant by synergy in the knowledge and information perspective. With the approach of health promotion as a process of organizational development and investment in health issues, new opportunities and incentives to promote and steer action in many sectors of society have to be discovered. Communities can be considered as systems of power and influence with formal and informal functions for maintenance: management of conflict and competition, allocation of resources, and formation of public policy. The distribution of information is central to these maintenance functions which are carried out through the interaction of subsystems including mass media and other institutions, organizations, and groups (Finnegan et al, 1993).

Organizations learn and change through a process of diffusion. Networks between organizations facilitate diffusion of ideas and practices. Mobilization and involvement of key community organizations will provide the impetus for total community participation in a programme for change. The key organizations network with each other and, in a manner congruent with the diffusion theory, the 'change' spreads throughout the community. For many proponents of this view, community change is nothing more than the aggregated activities of organizations also referred to as intersectoral collaboration (Saan *et al.*, 1994; Hastings, 1993; Taket, 1988).

To achieve intersectoral participation, initiatives must seem meaningful and reasonable to the participants of interest (Cook *et al.*, 1988). Differences in the cultural orientations of the different actors can be a primary barrier to communication and collaboration. An important part of a cultural system is the 'valued ideas' of its members that dictate how things should be done. Furthermore, there must be understanding of each other's major goals (Disogra *et al.*, 1990) and participants should be convinced that their combined contribution becomes more than the sum of their individual contributions (Koelen & Brouwers, 1990).

In the United States the initiators of four nutrition programmes decided to meet regularly to discuss their programmes which all work through existing channels (Disogra *et al.*, 1990). After the first year, they all expressed their frustration about the difficulties often experienced in establishing and maintaining collaborative

relationships with other organizations. These problems included lack of follow through, unclear roles and responsibilities, lack of management support, and conflict with organizational liaisons. They felt that problems resulted primarily from these sources: inexperience in working in the private sector, lack of understanding about others' motivations, inability to promote mutual benefits, insecurity about negotiating the terms of the relationship, and failure to stand back and critically assess nature and status of the partnership. They felt that more open boundaries with mutual relationships would improve the flow and quality of information and thus improve the results. When working with organizations it is important to quickly and accurately identify possible organizational barriers to change and assess their modifiability. Key categories of barriers include: the climate for change in an organization, organizational structure (authority patterns, channels of communication etc.), technological limitations (lack of skills or tools), perceived threats to power and certain influences in parts of the organization, and counterproductive behaviour of top-level administrators. The group proposed the following key issues related to intersectoral collaboration:

- goals for mutual relationships; divergent goals must be explored and areas of mutual benefits must be identified;
- initiation: deciding whether to work with an organization; search for evidence that it will be possible to develop an effective working relationship;
- strategies for working with host organizations; important questions to ask relate to, among others; continued consensus on project goals and objectives; 'buy-in' at multiple levels of the organization; a clear sense of shared ownership for the programme; and effective negotiation with and responsiveness to the organizational system;
- identifying sources of resistance to change; clarity, willingness and ability, follow-through on commitments, adequate communication and openness, adequate participation and involvement and continuing enthusiasm;
- warning signs and strategic retreat.

4.5 Examples and learning experiences of the community-based approach

In the last fifteen years a number of health promotion initiatives have used a community based approach. The projects which will be discussed here are The North Karelia project (Finland), Lifestyle 2000 (Australia), Healthy Bergeijk (the Netherlands) and the Southern Vales Community Health project (Australia). The North Karelia project is an example of the interpretation of the community as a population, Lifestyle 2000 and Healthy Bergeijk are examples of communities interpreted as settings and the Southern Vales Community Health project is an example of a community as a social system (see 4.4.1). Each of these programmes has had specific learning experiences which will be examined.

4.5.1 The North Karelia project

In 1970, the two countries with the highest rates of cardiovascular disease in the world were Finland and the United States. In Finland, the highest mortality rates occurred in North Karelia, a rural county in Eastern Finland with a population of 180,000. The North Karelia Project was a media and health education campaign which began in 1972 under the auspices of the Finnish health authorities (Kottke, *et al.*, 1984; Puska *et al.*, 1985). The North Karelia Project chose to intervene on serum lipids, diet, smoking and hypertension. Several theories were applied to guide the community intervention. These were Fishbein and Ajzen's theory of reasoned action, Bandura's social learning theory, McGuire's communication theory and Rogers' diffusion theory (Puska *et al.*, 1985). These theories were combined by the North Karelia project team into a single model. External input from outside the project was through mass media communication and through formal and informal opinion leaders functioning as change agents to influence both individual behaviour and various aspects of community organization. The input was aimed at increasing knowledge, at persuasion, at teaching practical skills, and at providing the necessary social and environmental support for behaviour change and maintenance.

The North Karelia Project has reported five- and ten-year results. After five years, reductions were observed in North Karelia in prevalence of smoking, serum cholesterol level and blood pressure. The ten-year evaluation showed further reductions in risk factors, with a maintenance of the earlier reductions in serum cholesterol and blood pressure levels and even a greater reduction in smoking.

Results of the process evaluation and the experiences of the project team indicated that the success in North Karelia was not primarily based on increase in health knowledge or changes in health-related attitudes. Instead, broad-ranged community organization were reported to be of central importance. The project was able to disseminate its messages through the media and through opinion leaders so that it created a social atmosphere more favourable for change.

Since the project team claimed that the North Karelia project was a response to a demand which had come from the community itself Ashton and Seymour (1988) posed the Karelia question: 'Who was it who asked for the comparative data on heart disease death rates and thereby set the agenda? Was it the people themselves or their medical advisers? Ideally, the question should come from an informed public, but it is a chicken and egg situation: who informs the public? How can a non-paternalistic balance be struck?'

4.5.2 Lifestyle 2000

This community-based health promotion programme was conducted in Bunbury, Australia, a costal city with a population of 23,000. The 15-week intensive intervention commenced in 1988 and used mass media, environmental modification and community activities to encourage participation in health promotion activities likely to reduce the risk factors for diet-related diseases. Awareness of this project was also high and was achieved primarily through the media campaign. Changes in behaviour were small, however, changing a number of nutrition-related attitudes had been more successful.

The authors themselves state that the project in the strictest terms was not an example of community participation. In this project, the Community Advisory Committee, once established, was 'informed' of the project goals and then 'consulted' regarding the proposed interventions. They argue that it was not possible to involve the community more fully during the planning stage due to the short-term nature of the project. The Community Advisory Committee was used mainly as a 'sounding board' to advise on planned activities and to provide access to the community. Once operating however, the project team was approached by a number of community groups seeking assistance in organizing and promoting events consistent with the Lifestyle 2000 project messages. Furthermore, at the conclusion of the project a number of members of the Community Advisory Committee regrouped as a local health promotion team, to build on the impetus and the awareness created.

4.5.3 Healthy Bergeijk

Bergeijk is a small town in the South of the Netherlands with about 10,000 inhabitants. The project was initiated by the Department of Health Education of the University of Maastricht and the goal of the intervention was a reduction in the prevalence of four types of cancer-related risk behaviour: smoking, high fat consumption, excessive alcohol consumption and solarium use. The intervention was designed to integrate health education theory and methods of health promotion. University staff conducted a community analysis and carried out process and effect evaluation. The local project group with representatives from different sectors used a workbook which was developed by the university and included background information and guidelines and described about thirty possible health activities. During a six-month period the project group organized several of these proposed health activities such as stop smoking courses, living room nutrition sessions, newspaper articles, an information centre and a sandwich 'Healthy Bergeyk', which was sold in the local cafeterias. The project group was supported by a part-time local co-ordinator and after the research period the project has continued with a grant from local and provincial government.

The project partially reached the behavioural objectives. The process evaluation showed that familiarity with the project was high, that positive elements of the project concerned the intersectoral co-operation and the workbook supplied to the project group. Time pressure and limited responsibilities for community initiatives were experienced as the main negative aspects of the project. In other words, the community felt a lack of 'ownership' (Assema, 1993).

4.5.4 Southern Vales Community Health Project

The Southern Vales Community Health Service developed a community work approach to the problem of isolation within a semi-rural and urban community (McWaters *et al.*, 1989). A first step was the development of a Community Forum. Various community groups, individuals, residents and agencies in the area were consulted and it appeared that what people needed most was a better transport service. A subcommittee was initiated with the aim to specifically investigate the potential need for a community bus and make recommendations to the Forum. They recommended to purchase a community bus. However, despite the Council's approval in principle, no further action was taken. The Forum then directed the sub-committee to look at the broader issue of transport, which it did by lobbying local government, State Transport Authority, Department of Transport, local politicians and by inviting local residents' associations and other groups to be involved in the sub-committee. Twenty-five people attended a general meeting and in this meeting a steering committee was formed to work towards the establishment of a community service board. This led to a joint project being initiated (using the Health Service van, and volunteer drivers, with the Council taking responsibility for running costs) which offered a local community bus service on Fridays. Simultaneously, a local resident commenced using his own small van to provide a low-cost seven day-a-week taxi service, and approached the steering committee for information and support. In the meantime, a private bus service extended its run to include a particularly isolated area, and a residents' group lobbied another private service to increase its service to the regional shopping area. A public meeting was held and was well attended by 70 people. It served to promote community awareness and a Community Services Board, with 9 members (mainly local residents) was elected. The Friday Bus pilot scheme was extended to run for a further 9 months.

When project workers looked back at the project they had difficulties with the evaluation. What outcomes were of importance? And secondly, given the nature of community-work as an ongoing process, when was it the best time to measure? Was it a failure when no extra public transport services could be achieved or was the range and number of community participants involved in the discussion and decision making a sign of achievement? They recognized that the process was as important as the visible outcomes and that it was important to allow time for reflection and recording of the process and outcomes. By doing this, roles, purpose and

identification of who was to be involved could be clarified and steps forward could be planned. Another issue they identified was: for whom was the evaluation: they themselves, the agency, or the community? They felt that all three were important since they needed to know if objectives were attained and the agency needed some form of accountability. They further felt that if communities were involved and were assumed to have responsibilities for decisions and planning, they should also have the opportunity to say how useful they found the process and whether or not they believed it had benefited themselves or their community. Overall, project workers concluded that putting principles of participation in practice requires a flexible response to identified community needs and opportunities for participation of both community members and local service providers. To be facilitators of this process through a community-work approach requires health services, workers and the community to see that community work is a legitimate intervention in the promotion of health. In addition, health workers need the support of their agency and co-workers.

4.5.5 Learning experiences from the programmes

All four programmes reported that they were working according to a community based approach. Nevertheless, due to different interpretations of what a community is and what participation means in practice, the implementation varied widely. However, several similar learning experiences were reported.

A first important learning experience is that time plays an important role. Behaviour change does not occur overnight and building partnerships is a slow process. Time pressure due to limited project funding often results in a lack of sufficient attention for guiding the process of community involvement and building up intersectoral partnerships. Project workers report this as a frustrating element of projects restricted to one or two years. The consequence is that often the choice is made to put main emphasis on the development of activities and health education material and to pay less attention to organizing aspects.

In spite of time pressure, all four programmes experienced intersectoral collaboration to have been of central importance for the outcome of the project. Due to shared ownership of the programmes much more had been possible than if one organization only had taken care of the programme. Additionally, programmes were continued or initiatives were taken over by other organizations.

Besides similarities there were also some differences between the programmes. For the first three programmes a change of lifestyle was the main objective. The targets of the North Karelia project were set by professionals and the interventions were carefully planned by a professional team. Opinion leaders were educated to further support programme implementation. Although the Lifestyle 2000 project was also

mainly planned by professionals they included a consultation phase, *i.e.* community members were asked if they agreed with the planned activities. Healthy Bergeijk went a step further by asking the project group to choose from a number of proposed activities to improve lifestyle. For The Southern Vales Community Health project the choice of improvements was not made beforehand. The project started with an investigation of the needs felt by the community.

The interpretation of how to work with the community (informing, consulting or facilitating) also determined the choice of success factors. The evaluation of the North Karelia project, Lifestyle 2000 and Healthy Bergeijk was focused on prevalence of risk factors although the latter two projects also paid attention to the process as well. Due to the approach chosen for the Southern Vales Community Health project many interesting questions were raised about the choice of the success factors. Project workers clearly experienced that the choices they had made were of great influence on the evaluation and that this evaluation was not only for themselves but also for the agency and the community. They concluded that process was just as important as visible outcomes and that reflection during the process had been very helpful for a further development of the programme.

4.6 Summary

This chapter has served to illustrate that the transfer of information strategy is insufficient in the field of agricultural extension as well as in the field of health promotion. In both fields professionals have recognized that context is an important factor as well and that the members of the target group (farmers/community members) themselves are important sources of knowledge and information. Nowadays many health promotion workers believe that individuals can only change if their social and physical environments change and if they themselves are involved in the process of change.

A strong agreement exists about the principles of health promotion. However, there is no consensus about the way in which these principles have to be put into practice. This can be explained by the fact that everyone has his or her own interpretation of the key concepts such as community participation and intersectoral collaboration. As illustrated by the case studies, the interpretation chosen also has clear consequences for the choice of success factors. The more facilitative the approach becomes, the more one is interested in process indicators.

The systems perspective has been chosen as being the most appropriate framework for the SUPER project. This makes an interactional approach necessary, with active sharing of information between the different subsectors and community members. Organizing aspects of community based health promotion require sufficient time and energy. Partnerships cannot be built overnight and networks need to learn through

experiences what working together could mean. If these aspects are well taken care of, it is likely that the behavioural objectives can be achieved as well.

Overall, for projects which put the main emphasis on community participation and intersectoral collaboration, such as the SUPER project, process is just as important as behaviour change.

5 Project methodology of the SUPER project

5.1 Introduction

Action and research are strongly related in the SUPER project. Yet, for a clear overview the project methodology and research methodology are described in separate chapters. However, before clarifying the project methodology and its developments, the interrelationship between action and research is explained since the distinction between the two is superficial. This is followed by a description of the project procedure and an outline of the approach in practice at organizational, environmental and individual level as related to the theoretical considerations described in the previous chapters. The specific research methodologies are described in chapter 6.

5.2 The interrelationship between action and research

Mittelmark *et al.* (1993) report that 'community-based health promotion is complex, technologically challenging and ever changing as new knowledge is gained'. This resembles the experience within the SUPER project. The approach of the SUPER project is new for all participating cities. It is characterized by a continuous learning process throughout the project which has resulted in redefining goals, research and philosophy with time. Within the SUPER project action and research are strongly linked. By means of research perceived problems, solutions and opportunities are identified. Research also plays an important role in guiding and evaluating the process and is carried out to facilitate change or innovation. This type of research is therefore different from research which tries to explain natural phenomena. The research applied in the SUPER project follows the route of problem - diagnosis - plan - intervention - evaluation (Koelen & Vaandrager, 1994). Research related to these phases is described as: preliminary research, programme development research, research to support and guide the process and evaluation. The idea is that each step of action is preceded and followed by research. In practice, phases of action and research are often mixed up and do not always follow each other in time. Nevertheless, within the SUPER project four phases of action are distinguished which more or less succeed each other:

1. building networks;
2. planning the activities;
3. executing plans; and
4. adjusting the approach and plans.

A first step in the process is to identify potential actors and to build a network, to create enthusiasm for nutrition promotion among these potential collaborators and to motivate collaboration. This phase is supported by research to identify and clarify objectives of the potential actors and to analyse opportunities and incentives for collaboration to get people motivated to work together. Furthermore, participants need to be convinced of the necessity to take action in the field of nutrition. Research (preliminary investigation) in this phase is carried out to demonstrate the eating habits of inhabitants, the factors which influence this behaviour such as price or availability of healthy food and to identify settings where activities can be organized (situation analysis). Building networks and encouraging collaboration does not only play an important role in the beginning; it is integral throughout the whole process and depends on shared feelings of responsibility and a well-motivated local co-ordinator.

During the next phase the partners develop intervention strategies for the project areas to encourage citizens to adopt healthy lifestyles. For the plan of action the members of the steering group have to decide what kind of activities will be organized and which supporting material is needed. Programme development research is applied to study how to link up with pre-existing activities, how existing health promotion material can be used or how ideas for new activities can be developed and piloted.

During the execution of the action plans the collaboration process is supported by research and the success and sustainability of the different initiatives is examined. Evaluation is required to study opportunities and constraints. Behaviour change can only occur under certain preconditions. One precondition is that the activities take place over a longer period of time since behaviour change is a slow process. Instead of having an incidental character (a one-shot intervention), the initiatives are aimed to have a long-term character by trying to build them into the local situation and if successful, to let them recur. It is therefore an ongoing process of planning, implementation, reflection and adjustment of the strategy.

Figure 5.1 illustrates that research is integrated in the action-process rather than being a separate activity. It is a continuous process in which the different phases have to be gone through over and over again. This model gives the impression that the indicated action and research steps follow each other in time. Nevertheless, this is often not the case since action and research run parallel to each other which is indicated by the helix between each step.

Because the SUPER project is a circular and ongoing process of decision making it requires a regular flow of inputs. The research methodology which can deliver these inputs is described in chapter 6. The connection between action and research must be clearly kept in mind while reading the succeeding paragraphs.

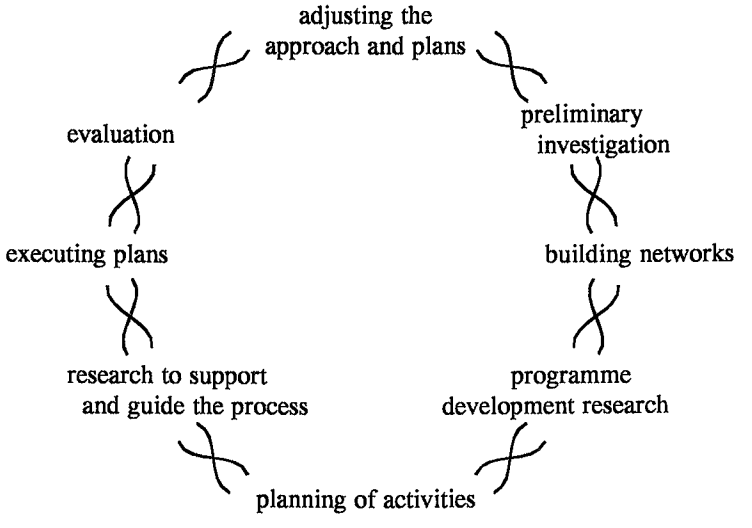

Figure 5.1 Relation between action and research in the SUPER project

5.3 Procedure

Each collaborating city within the SUPER project agreed to select two project areas in their city which had different socio-economic characteristics such as income and education level. This choice was made to be able to compare the approach in different areas and to develop models of good practice suitable for different circumstances (Vaandrager *et al.*, 1991). Valencia, Eindhoven, Horsens and Rennes chose for a middle class and a low-socio-economic class area. Liverpool originally started with the preliminary research in 7 areas (5 of low-socio-economic class and 2 middle class areas), but nutrition promotion activities and evaluation were only carried out in one selected deprived area which was also a Health-Action area of the city. Based on the experiences in this area the same approach was repeated in another inner-city area.

According to Thompson and Kinne (1990) social change operates on three levels: at the organizational/community level, at the environmental level and at the individual level. At individual level it is aimed at promoting healthy nutrition according to the

guidelines set by the governments of each country. A healthy diet is rich in vegetables and fruit; bread, cereals and other starchy foods; and may include fish and moderate amounts of lean meat, and low-fat dairy produce (see chapter 2). In fostering self-directed change it is necessary to enlist potential sources of motivation and to develop new ones. People need to be provided not only with reasons to change, but also with the means to do so, that is, the environment should support change. Healthy food and information about healthy food should be easily accessible in the area where people live. As explored in chapter 4, community organization also is important to change. Community organization refers to the process of mobilizing community leaders and citizens to contribute their time, money, and talent to set and attain goals of the programme (Bracht & Kingsbury, 1990). One objective of community organization is to foster the capacity and desire of organizations to incorporate health promotion activities into routines of leisure time activities, business, government, and education. Stimulated by community organization efforts, the local health agencies could provide technical expertise, schools could alter curricula, corporate leaders could introduce health promotion at the workplace, and business could donate time, contest prizes, space, and other resources (Cohen *et al.*, 1986; Mittelmark *et al.*, 1993). Summarizing this means that the SUPER project operates with a multiple actor model with three important groups of actors:

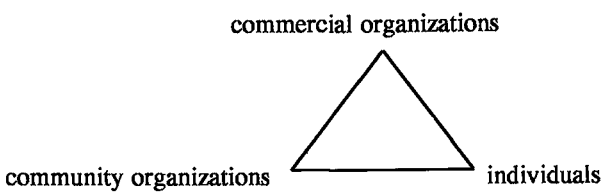

Figure 5.2 The multiple actor model

The aim of the SUPER project is to produce practical ways of improving the nutritional status in different European country settings. The initial objectives were mainly formulated as outcome objectives:

- a positive change of the environmental factors which influence public nutrition;
- a positive change in knowledge and attitudes regarding healthy diets and a change in dietary behaviour to improve public nutrition as a contributing factor to the long-term reduction of nutrition related diseases (cardiovascular disease, cancer, etc.);

During the development of the SUPER project, it became obvious that measuring a possible change in nutritional behaviour (a behavioural endpoint) due to the activities, was an extremely complex undertaking. Defining measurable targets is difficult as well since it is unknown what realistic targets are (Bronner, 1993). Furthermore, it was unrealistic to expect that the conditions for behaviour change were met within the time scale of 1 year of activities. It was felt important to continue actions for a longer period of time and to look at other criteria for success besides behaviour change. Impact on the nutrition problem is a valued outcome, but collective work with the community on the nutrition problem can be seen as equally important. Studying participation processes and formative evaluation therefore achieved more emphasis after the first phase of the project. Research to study processes however, differs from research to study outcomes. Much of the discussion in recent literature is focused on the emerging consensus that qualitative, ecological and other research approaches are needed to study processes of community health promotion projects (Koelen & Vaandrager, 1994; Hawe, 1994; Koepsell *et al.*, 1992).

Overall, the following process objectives became just as important as the outcome objectives:

- to incorporate the networks and the activities initiated in the project into the local structures so that community based nutrition promotion becomes a structural approach;
- to develop practical tools for health promotion programmes; and
- diffusion of the approach to other areas, cities or regions.

In the following paragraphs it will be described how these ideas have been applied to the SUPER project.

5.4 Community participation and intersectoral organization

As stated in chapter 4, community participation and intersectoral collaboration are perceived to be important elements of health promotion. Starting from the systems perspective of health promotion, active sharing of information between the different subsectors in the health system is an important prerequisite for facilitating change. The organized efforts include creating community awareness, joint problem analysis, consensus building about possible solutions, planning and implementation.

As people and organizations change, they serve as diffusers to others in the community. However, personal change occurs within a network of social influences. Depending on their nature, social influences can aid, retard, or undermine efforts of personal change (Ashton & Seymour, 1988; Lefebvre *et al.*, 1987; Koelen, 1988).

The intervention is therefore linked to local pre-existing activities and social networks are created to try and support and maintain a positive behaviour change.

To achieve intersectoral collaboration and participation, initiatives must seem meaningful and reasonable to the actors involved. It must make sense in terms of community culture (Cook *et al.*, 1988). In the system theory, coordination of activities and the division of tasks within a system are important issues. For the SUPER project to operate effectively, knowledge and information must circulate throughout the different subsystems (see figure 4.1). Since differences in the cultural orientations of professionals and communities can be a primary barrier to communication and collaboration, it is important that the various actors gain insight in each others 'valued ideas' that dictate how things should be done. Understanding of each other's major goals is an important aspect as well (Disogra *et al.*, 1990). Participants should also be convinced that their combined contribution becomes more than the sum of their individual contributions (Koelen & Brouwers, 1990).

In each city local intersectoral steering groups were set up. They consist of people who work and live in the project area, are able to plan nutrition promotion activities which are suitable for the local situation and which the local inhabitants believe to have a potential impact. The aim was to have the following groups represented:

1. community networks such as local consumer associations, self-help organizations, community care centres, schools and neighbourhood centres able to reach, involve and educate people;
2. health education/promotion workers (*e.g.*, from the municipal health services) who are experienced in organizing and implementing promotional activities;
3. community dieticians who have a high level of nutritional knowledge and are close to the target groups;
4. supermarket managers who can make health a product to sell; and
5. citizens who are able to deliver cultural insights, beliefs and knowledge, especially about the social structure of the community.

It must be noted that the subject nutrition and the initiative to promote healthy eating by applying health promotion principles was initially put forward by professionals. They were trying to find solutions for the problems of nutrition related diseases after they had experienced that the traditional approach of health education was not very successful. In most cities the initiative was therefore not a result of a community debate. Nevertheless, in most cities, problems put forward were recognised by the community.

In each city the project co-ordinator ('community organizer') organizes regular meetings with the steering group. He or she also represents the city at the yearly international SUPER-meetings where local project progress and future plans are presented. Since the SUPER project is a part of the Healthy Cities project, the local

project co-ordinators are mainly people who are connected with the municipality. Not all co-ordinators have had a formal training in public health. The steering groups are also in contact with the following organizations in their own country:

1. national bureaus or organizations (nutrition education bureaus, consumer associations, heart associations) which are experienced in the production of promotional materials; and
2. universities or research institutions responsible for research and evaluation.

The WHO Healthy Cities project (local, national and international) provides the overall framework for the project and linkages to other Healthy Cities.

5.5 Environmental interventions

The project is not only aimed at increasing knowledge and skills but also at enlarging the possibilities which support healthy behaviour. Environmental interventions include increasing availability and improving identification of healthy products (Vaandrager *et al.*, 1993a). The underlying premise of these environment-centred efforts is that facilitation of environmental stimuli and reinforcements for a healthy nutrition choice lead to healthier eating behaviour. The environmental interventions are aimed to be taken up by community settings. These are the places, networks, events, communication channels, and combinations of these settings that, together, comprise the matrix within which a community's enterprise takes place. Settings within the SUPER project are, for example, local supermarkets, schools, community centres and health centres. The SUPER project aims at building on local initiatives, using existing material and organizing the activities in local settings. The idea behind this approach is that people come across the activities in their daily life-settings and the combination of activities in different settings increases the reach of the project. Furthermore, building the activities into the local structure has as a result that they can very likely be sustained.

The supermarket is an important setting because for a number of people food choice is undoubtly influenced at point of purchase. The original idea behind the SUPER project was to organize activities in supermarkets, but because of the involvement of people living and working in the project areas the project broadened out to other settings such as health centres, schools, libraries and neighbourhood centres. The expansion connected very well with the health promotion principles so this development was welcomed and supported. In the following two paragraphs the organization of activities within these settings will be examined.

5.5.1 Supermarkets

Supermarkets have been chosen as a central point for the activities to take place. There are several reasons why supermarkets offer good opportunities for promotional activities. Supermarkets are at the end of the information chain which means that they can mobilize information as an incentive for change. It is known that at least 50 percent of the buying decisions are made in the supermarket. The way people make choices depends on high or low involvement. Engel & Blackwell (1982) define involvement as 'the activation of extended problem-solving behaviour when the act of purchase or consumption is seen by the decision maker as having high personal importance or relevance'. Consumers are often more 'involved' when they buy a car than when they buy a food item. Incentives for a healthy choice at point-of-purchase can therefore be most influential if consumers are relatively highly 'involved'. Or in other words, the more people are convinced that the food they choose influences their health the more attention they will pay to what they actually buy and why.

Supermarket managers attempt to influence customer purchases by the use of locational strategies, (*e.g.*, sweets at the checkout counter), attentional prompting (*e.g.*, colourful signs and displays), and incentive-based prompting, (*e.g.*, discount coupons). Because they are familiar with point of choice strategies, they are more likely to adopt a pro-nutritional programme in which these strategies are emphasized (Mayer *et al.*, 1989). Furthermore, promotional activities in supermarkets have the potential to be cost-effective given that they are low in labour intensity (relative to nutrition education conducted one-to-one or in a group format). Finally, supermarkets offer an important opportunity for promoting a selection of nutritious foods. These environmental strategies which depart from traditional individually-targeted educational techniques, (*e.g.*, leaflets, articles and books) are likely to reach more people (Mayer *et al.*, 1989; Glanz & Mullis, 1988 Mullis *et al.*, 1987; Pennington *et al.*, 1988).

Since many foods of different composition are available in most of the European countries, the promotional activities focus on key-food items (milk, bread, meat, fish, vegetables, fruit, pulses and fat). In each city combinations of activities are organized in supermarkets which have the following objectives:

- awareness of the role of nutrition with regard to general health;
- increase of incentives to buy healthy food;
- stimulate active involvement with healthy foods; and
- empower people to make the healthy choice.

To attract attention the cities use posters at visible spots, labels on the shelfs to indicate healthy choices and information stands. Pictures of healthy meals, exhibitions of how diet changed over the years and trollies filled with healthy

products are used to visualize the message. Leaflets and recipes are available at the information stands but also at locations in the shops where particular products are sold. Shoppers can taste products or dishes prepared during cooking demonstrations in the supermarket. Incentives to buy healthy food can be price reductions or special placement depending on what is locally possible. To stimulate active involvement shoppers and children are challenged to take part in competitions. Example of these competitions are to guess a price of a 'healthy trolley', to invent a healthy recipe or to participate in a healthy eating quiz.

5.5.2 Other neighbourhood settings

As stated before, other settings have also started to play an important role during the development of the project. Depending on local possibilities and priorities these settings and activities are different in the different cities. The additional activities include cooking classes for different age-groups or parent-support groups organized in neighbourhood centres, availability of healthier menus in local restaurants, nutrition education in schools and activities during local festivities such as street fairs or city celebrations. How these activities have been developed based on the local situation will be described in more detail in chapter 7 for Eindhoven and in chapter 8 for the other cities.

5.6 Efforts to encourage individuals

Since the seventies there has been a sustained attempt by governments to inform the public of 'the nutrition facts'. The idea behind the 'transfer-of-knowledge'-model is that through awareness, information, evaluation, trial and finally adoption people change their behaviour (Rogers, 1983). The official line has been one of individual responsibility and within the field of health promotion this is often referred to as 'victim-blaming' (Labonté & Penfold, 1981). In chapter 4 it has been discussed that information and knowledge are important but not sufficient for behaviour change. Furthermore, the threatening and straightforward nutrition education messages have made healthy nutrition to be unappealing, untasty and unsociable (Koelen & Vroom 1986). Moreover, most people voice a considerable degree of scepticism about official health warnings, noting that 'they' (the experts) are known for changing their minds and that 'if you listened to everything they say, you would not eat anything, would you?' (Caplan, 1993). As indicated in chapter 2 this scepticism is not totally correct since most scientists in Europe agree that the Western diets contain too much fat, sugar and salt and too little fibre. However, as described in the introductory chapter of this doctoral dissertation, health promotion is based on health rather than on illness. In the field of nutrition this means promoting what is good for general health such as fruit, vegetables, fish, lean meat and pulses instead of focusing on food which people should not eat.

Nutritionists have found that people perhaps know about the rules, yet do not put them into practice. In the light of these experiences, some nutritionists have begun to look to the social and behavioural sciences for help which has resulted in the proliferation of relatively new journals such as 'Ecology of food and nutrition' and 'Journal of Nutrition education' (Mennell *et al.*, 1992). Since social and cultural factors play an important role (see also chapter 3), they have to be taken into account when encouraging individuals and groups to have a healthy diet. Therefore, promotional activities which take place in the SUPER project are aimed to be of a positive nature, trying to incorporate cultural and social values of food. This means, for example, trying to find tasty alternatives for cakes or snacks which are of less nutritional quality (high in fat and sugar) but which have an important social significance when celebrating an event. Indeed it is also possible to show that it is acceptable to eat cakes and snacks in moderation and as a part of a general balanced nutrition pattern. Another example is showing how traditional recipes can be used in a nutritiously responsible way.

A corollary of this approach is that nutrition promotion activities in this project are aimed at teaching the skills of finding healthy products, producing balanced meals, and making healthy food something special and desirable.

In summation the objectives at individual level are:

- to achieve a positive image and positive attitudes towards healthy nutrition;
- to increase nutrition knowledge;
- to increase skills to find healthy products and prepare healthy meals; and
- to increase the consumption of healthy products.

6 Research methodology of the SUPER project

6.1 Introduction

As described in chapter 1 and in chapter 4 there have been fast and fundamental changes in our conception of health and health promotion. Without taking social and environmental factors into account individual behaviour modification techniques were found to be insufficient for the improvement of health. Putting more emphasis on context also requires a different kind of research methodologies. However, the response to the call for more attention for health promotion research by major research establishments has been slow and still minor in comparison with biomedical, technological and health care economics research programmes (Milio, 1990b). The fact that this development has lagged behind was also experienced during the development of the SUPER project. The originally planned research methodology was partly based on conventional techniques. Limitations of some of these research methodologies were experienced during the execution of the project. Furthermore, it became clear that most of these methodologies were based on the individual behaviour change model whereas for health promotion, physical and social environment are believed to be equally important. Since collaboration and participation processes are assumed to be key characteristics for successful health promotion (see chapter 4), research supporting and evaluating these processes was keenly felt to be needed. Additional research techniques and combinations of research methodologies were developed during the course of the project which where appropriate for each local situation. It resulted in a repertoire of research methodologies which will be described in this chapter.

6.2 The originally planned research methodology

The SUPER project initially started with the idea to promote healthy nutrition through supermarkets. An innovative approach appeared to be necessary since traditional ways of nutrition education, the rational appeal to individual behaviour change, had not been very successful (see chapter 4). Promoting healthy nutrition through supermarkets meant collaboration with the commercial sector and setting up nutrition promotion activities which were new in most cities. From experiences in the United States it was known that under certain conditions, nutrition promotion in supermarkets could positively influence shopping behaviour. The idea to promote

healthy nutrition at point of purchase was quickly spread in the United States which is reflected in the number of initiatives in this field (see chapter 5). These ideas also connected very well with the starting points of the Healthy Cities project to make environments supportive for health (Ashton, 1992). This was the reason why the collaborating cities within the SUPER project were enthusiastic enough to concur this issue. Furthermore, the cities were already working according to a health promotion approach in which the need to focus on structural and process components of institutional and community change is emphasized. During the first international business meeting with the representatives of the participating cities in Valencia in 1990 it was discussed how the supermarket interventions could be organized (Vaandrager *et al.*, 1991). Since this idea was relatively new for Europe, it was important to measure its effectiveness. It was decided to work within a three year plan and to include research to support planning strategies and evaluate the impact. It was proposed to start with a baseline survey to document frequencies of food consumption, nutrition knowledge and attitudes of inhabitants of the project areas and to carry out an inventory in supermarkets to explore selling policies of local supermarkets. The findings would then be translated into an intervention and finally a follow-up survey (including baseline repeat) and a repeat of the inventory in supermarkets would be carried out to be able to show the effects (evaluation). As each step would take a year, the project was to extend over three years (see figure 6.1).

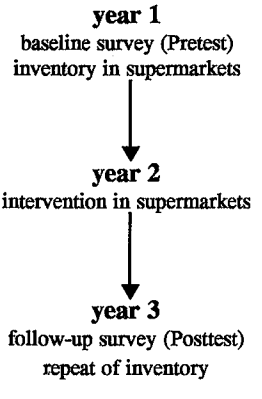

Figure 6.1 The original working plan

Also of interest was, whether the results of the supermarket intervention were different in different socio-economic areas so each city chose two project areas: a lower socio-economic one and a middle class one.

It was clear that people living in the project areas were not only going to be influenced by the organized activities in the supermarkets. If a positive behaviour change would be found, several other factors such as programmes on television, a heart attack in the family or articles in the newspapers could be reasons why people changed their diet. These factors are threats for the internal validity of research. Internal validity refers to the approximate validity with which a relationship between two variables is assumed to be causal or to whether the absence of a relationship implies the absence of a cause. Cook & Campbell (1979) have described some of these threats. They include:

- *History* is a threat when an observed effect might be due to an event (which is not of the research interest) which takes place between the baseline and follow-up;
- *Testing* is a threat when an effect might be due to the number of times particular responses are measured. In particular, familiarity with a test can sometimes enhance performance because items and error responses are more likely to be remembered at later testing sessions;
- *Mortality* is a threat when an effect might be due to drop-out of subjects of a particular treatment group during the course of an experiment;
- *Selection* is a threat when an effect might be due to a difference between the composition of the experimental and the control group;
- *Diffusion or imitation of treatments*: when the various experimental (and control) groups can communicate with each other, respondents in one treatment group may learn the information intended for the others. The experiment may, therefore, become invalid because there are no planned differences between experimental and control groups; and
- *Compulsory rivalry*: where the assignment of persons or organizational units to experimental and control conditions is made public (as it frequently must be), conditions of social competition may be generated. The control group, as the natural underdog, may be motivated to reduce or reverse expected differences.

It was decided to use a quasi-experimental design with a pretest-posttest control group (Cook & Campbell, 1979) since a number of these threats can be ruled out by using this design. If changes occur in the experimental group, but not in the control group one might be reasonably sure that changes have occurred due to the intervention. Of course this design is still not a watertight guarantee since only the first three above mentioned threats can be controlled by using this design. The last three remain a threat for the internal validity.

6.3 Limitations

It was soon experienced that the originally planned research methodology was missing important elements. First of all the research model was based on an individual model trying to measure knowledge, attitudes and behaviour change

caused by an intervention. System advocates of health promotion, however, assume that it is hard for the individual to change if the context does not change. Individuals are therefore not the only source of change in a community or system. Since it was chosen to work with the systems perspective of health promotion (see chapter 4), changes in subsystems and their interrelationships are believed to be a prerequisite for individual behaviour change. Based on these principles, the participating cities in the SUPER project started to set up intersectoral strategies to promote healthy nutrition which resulted in the development of activities in many other settings beside supermarkets such as schools and neighbourhood centres which was very much in line with the health promotion principles. Most cities expressed a need for ways of supporting and reflecting intersectoral collaboration and community participation. It would therefore be a restriction to only study the individual because this would result in trying to understand just a part of what was actually happening.

The second limitation is that the quasi-experimental design is based on the idea to discover, predict and control natural phenomena. It is a process of reductionism, which involves breaking down components of a complex world into discrete parts, analyzing them, and making predictions about the world, based on interpretations of these parts (Pretty, 1995; Chandler, 1992). Community programmes, however, assume that there is a synergy among components, with the whole being greater than the sum of the parts. To study synergistic effects, many combinations of components would have to be tested against each other. Component analysis in programmes with just a few components is difficult and expensive at best; in programmes with many components, and several possible combinations, component analysis is impossible. Furthermore, tests of components within community programmes are utterly contaminated by the larger intervention; we have no way of knowing if outcomes would be similar under different community circumstances. Mittelmark *et al.* (1993) suggest that more appropriate criteria for component selection include: affordability, manageability, compatibility with existing programmes, level of community interest and potential for institutionalization.

The third limitation was that the role of the researcher as being the one to discover the facts and relationships and to judge and evaluate the programmes as an outsider did not fit either. During the execution of the project, it became more and more clear that research within the field of health promotion does not only have to deal with the explanation of certain phenomena, but also has to solve problems observed. Health promotion is an ongoing process of decision making that requires a flow of regular inputs rather than one intervention-evaluation situation. To develop a process of change, resulting in organizational learning during a considerable period of time, the researcher can play an important role in stimulating and guiding this process. This is often referred to as action-research (Peters & Robinson, 1984) or formative evaluation (Dehar *et al.*, 1993). Within this model the researcher cannot simply stand aside and just report research findings to the decision makers. The researcher acts less as a disciplinary expert than as an equal member of the team who tries to

deliver research insights to support decision making and tries to mobilize the relevant expertise. It is about facilitating team building, analyzing possibilities and reflecting on processes together with actors involved (Foote Whyte, 1991).

A further limitation was the budget. Compared with community-based programmes such as Heartbeat Wales (Nutbeam & Catford, 1987) or the Minnesota Heart Health Programme (Mittelmark *et al.*, 1986), the SUPER project had limited funding. Programme planners were based in non-research settings with no additional budgets for research, whereas the above-mentioned projects were in the privileged position of sometimes having half or more of the budgets to spend on evaluation. Having sufficient funding for research has the advantage that 'proper' research can be carried out, but has the disadvantage that it is quite unrealistic since most public health practitioners have to work with limited budgets. Furthermore, it makes projects dependent on researchers, whereas it would be more ideal when in the end, research could be carried out by the project members themselves ('letting go'). In that sense limited funding within the SUPER project has not been a limitation. The limitation of restricted budgets nevertheless came forward during the discussion about a control group. The most common choice for a control group is a group of people living in an area at a reasonable distance from the experimental group, comparable to the experimental group, but which does not receive an intervention. The advantage is that the probability of people of the control group being 'infected' by the intervention is quite small. A disadvantage is that it can be difficult to find a group which is comparable with the experimental group. Furthermore, the research was not only carried out to measure effectiveness but also to plan suitable strategies. The representatives of the participating cities, of which most of them did not have additional budgets for research, were in the opinion that interviewing in another area where nothing was going to be organized would cost them a lot of resources. These were actually not available and even if they were available they would rather spend them on action than on research since they were more interested in serving the community than in research. Since the intervention in supermarkets was at first the main interest of study it was decided to choose the alternative of the supermarkets as experimental and control areas instead of geographically defined communities. Therefore in each project area the two supermarkets most frequently used were selected. In one supermarket activities were organized (experiment) and in the other supermarket (control) there were no activities. An overview:

		Intervention	
Experimental supermarket	O_1E	yes	O_2E
Control Supermarket	O_1C	no	O_2C

O_1 = baseline measurement
O_2 = follow-up measurement

Figure 6.2 Design of the study to measure the impact of activities in supermarkets

6.4 Adjustments in the approach

Mittelmark *et al.* (1993) stress that risk factor change assessment at community level is extremely complex and an expensive undertaking. Samples must be large, surveys must be frequent, the study period must be long, the measurements must be done with great care, and the statistical analyses must be very advanced. The issue here is not so much the ability of intervention to affect behaviour but the ability to measure behaviour change. In some ways, this is technically even more difficult than assessing risk factor change - a problem compounded by well-known difficulties in gathering valid reports on own behaviour. Therefore Mittelmark *et al.* (1993) recommend participation rates as primary outcome measures.

The different view on research which became stronger during the course of the project had consequences for the techniques to collect the data. As far as the measurement of knowledge and attitudes is concerned, there is nothing wrong with the individual surveys. However, since nutrition related behaviour is rather complex, not only influenced by individual factors (see chapter 2), those measurements are far from complete. Other measurements were necessary as well. Rapid appraisal (WHO, 1991b; Engel *et al.*, 1994; Engel, 1995) and a combination of simple research techniques turned out to be helpful for process planning, development and reflection. By blending and integrating methods and data studying the same phenomena, a more complete, holistic and contextual portrayal can be captured. This is also referred to as triangulation (Scrimshaw & Gleason, 1992).
Research to guide, support and evaluate the project was therefore not only carried out at individual level (knowledge, attitudes, behaviour) but also at:

- environmental level: situation analysis, local possibilities to buy healthy food or to obtain information about healthy nutrition, feasibility of activities in different local settings, environmental changes etc.;
- community level: interviewing key informants, focus group discussions, social networking and cohesion, quality of participation and conditions for cooperation; and
- the level of the project as a whole; incorporation into the structure and formulating general guidelines of the process for others by developing a resource pack together with the participating cities.

Figure 6.3 gives an overview of research which has been carried out during the key stages at individual, environmental and community level. Not all the research methodologies have been applied in each city and the way they have been applied has also been different. This chapter however, tries to give a general overview and in chapter 7 and chapter 8 more details will be given about each local application.

	Key stages			
Level ↓	*Preliminary investigation*	*Programme development research*	*Research to support and guide the process*	*Evaluation*
Individual	Baseline survey (Pretest)	Pilot of material and activities	Process evaluation	Follow-up survey:baseline repeat (Posttest)
Environmental	Situation Analysis Supermarket Inventory	Pilot the feasibility of activities in local settings	Process evaluation	Repeat of supermarket inventory
Community/ Organizational	Interviews with key informants Cohesion measurement Focus group discussions Rapid Appraisal of the Food Network	Rapid Appraisal of the Food Sector Facilitating network building (organizational structures)	Participation measurement Focus group discussions	Development of resource pack Focus group discussions feeding back the results of the baseline repeat

Figure 6.3 An overview of phases of planning and the different levels of research

The following paragraphs give a detailed description of the research methodology for each level.

6.5 Individual level

6.5.1 Introduction

Research at individual level was carried out to gather information which could be used to plan strategies, pilot material and activities, guide and improve action and evaluate outcome and process.

6.5.2 Planning and outcome evaluation

At the individual level the indicators awareness, knowledge, attitudes, beliefs, behaviour and needs are relevant. A baseline survey measuring these indicators was conducted in two different socio-economic areas of each city (the project areas) and was repeated after a first plan of action was carried out. The aim of this survey was twofold:

1. to be able to plan the content of the nutrition promotion activities which were suitable for the local situation (identification of personal, environmental, economic and cultural characteristics which influence consumers food choices); and
2. to gather information (existing consumption patterns and nutrition knowledge and attitudes towards healthy eating) about the starting point (Pretest) which could be used for the outcome evaluation (Posttest);

On the basis of these data, local steering groups were able to plan the content of the nutrition promotion activities suitable for the local situation and which the interviewees believed to have a potential impact. This information was obtained by means of personally structured interviews, carried out with a representative interview for each area. For each of the cities the questionnaires consisted of questions about dietary habits (a food frequency list), knowledge, attitudes, possibilities for a healthy choice (*e.g.*, distance to the shop, car ownership etc.) and background information (income, education, profession etc).

The baseline survey (pretest) was also carried out for the outcome evaluation. To study if the goals of the intervention at individual level were achieved, the same respondents which had been interviewed before the activities, were interviewed after the first intervention period (posttest). The follow-up survey included additional questions about the organized activities. By comparing the pretest outcomes with the posttest outcomes changes in knowledge and attitudes towards healthy eating dietary habits could be measured and could be compared with changes in the control groups.

The effect evaluation results at individual level were compared between the cities. Because of the local differences, the activities in each city were not the same (*i.e.* different promotion material was used), but all the objectives at individual level (see chapter 5) received attention.

6.5.3 Action-supporting research at individual level

Action-supporting research at individual level included piloting of material and activities, short-term effectivity studies of particular elements (*e.g.*, activities in

supermarkets) and process evaluation. There are some general characteristics of these studies:

- a description of each organized activity, how it went, who was present, how many people showed an interest or took a leaflet, how the atmosphere was etc.; and
- when possible an inventory of the opinion of members of the target group and project workers was made about the activities, the organization, the expected impact, who the programme was failing to reach and why.

6.6 Environmental level

An important starting point of health promotion is to build on existing local activities within the health care and community setting. The aim of research at the environmental level was to discover environmental potentials and barriers for a choice of food and access to and application of nutrition promotion activities in various local settings. The situation analysis, carried out as a first step of planning, included observing and studying existing material of the project areas. An inventory was made of local physical facilities such as shops, health centres, schools, libraries, neighbourhood centres (WHO, 1991b). During the programme development research, it was investigated as to which local settings, such as supermarkets, the yearly community fair, schools, neighbourhood centres and libraries, activities could be organized and which activities were feasible.

Supermarkets achieved extra attention within the environmental research component since initially they were chosen as central points for activities to take place. Before promotional activities took place, an inventory was carried out in the experimental and control supermarkets. The idea to measure the activities of a supermarket towards promoting healthy food was based on work of Mooney (1987), Dunn & Winkler, 1988) and Cheadle (1990 & 1991). To measure the full range of activities in a supermarket is very difficult and probably impossible and therefore a selection of indicators was made. The indicators were: availability, price, promotion and information. The inventory focused on a selected amount of packaged food items (milk and milk products, fats, pasta, rice, jam, crisps, packaged meals, soft drinks and beer), fresh food items (meat, meat products, cheese, bread, vegetables and fruit), and the health food section. The packaged and fresh items which were included in the inventory were selected as markers of the local diet and were the same food groups which were included in the preliminary investigation at individual level. Where possible, selected food items within a food group were categorized as 'less healthy' or 'healthy' (*e.g.*, white bread and wholemeal bread); 'healthy' products being either low in fat, low in sugar or high in fibre. For fruit and vegetables it was recorded how many types were available. Price per weight (cheapest version), special offers or promotion (special placement, additional

advertisement) were recorded for all the selected food items. For the selected packaged food items nutrition labelling and health claims were also recorded.

After the first plan of action was carried out, the supermarket inventory was repeated to monitor changes. In addition, managers were interviewed about the input they thought the programme had on their shop policy and the buying behaviour of visitors of the shop. Furthermore, sales figures before, during and after promotion activities were compared.

Besides this measurement, local project workers tried to record environmental changes which were the result of project activities, such as food cooperatives which were set up because of the extra focus on nutrition.

In Valencia an additional measurement was carried out to find support for the hypothesis that socio-economic characteristics are considered to have a major impact on food consumption. Sales figures of 10 selected food items in different socio-economic areas were compared in all the shops of one supermarket chain. Sales figures are indicators for nutritional status. It is an easy tool and a less time consuming method compared to surveys because the supermarkets have these data available anyway (Gutiérrez *et al.*, 1994). Although it is an easy tool, it appeared to be quite exceptional that Valencia managed to obtain these data. Most supermarkets or supermarket chains in the other countries involved were not always willing to make these figures public and sometimes registration of sales figures was very badly organized.

6.7 Social or community level

Research at social or community level is of importance during three phases of the SUPER project:

1. to identify and link up with existing networks which work together in the field of health and nutrition (as part of the preliminary investigation);
2. to establish networks which could work together to improve nutritional behaviour (as part of programme development research); and
3. to evaluate the quality and conditions for cooperation and participation in decision making and to try and improve this quality as perceived by the participants (as part of action supporting research and evaluation research).

In the following paragraphs research at social or community level in these three phases will be elucidated.

6.7.1 Identifying existing networks and establishing new networks

A global insight in community structures and existing networks is necessary to understand the local situation and to be able to incorporate the project within these structures (WHO, 1991b). There are several possible methodologies to gain insight into the existing structures. The different cities have been using different methodologies according to their local possibilities and wishes. The methodologies which have been used in all of the cities are the following:

Interviews with key informants who know the area

Key informants are important sources of information about what the researcher as an observer did not or cannot experience. They are a source of explanation for events the researcher has actually witnessed. Key informants are people who are particularly knowledgable and articulate, people whose insights could prove very useful in helping a researcher understand the situation. They have access to information about the community and can be seen as representatives of a range of opinions which the community holds (Annet & Rifkin, 1988). The danger in using key informants is that their perspectives will be distorted and biased, giving only a part of the picture. It is important to keep in mind that data obtained from informants represent perceptions, not truths (Patton, 1990).

In the SUPER project the key informants are contacted to obtain general information about project area, health and social conditions, existing social activities and networks, shopping possibilities and nutritional habits. The key informants are not only contacted to serve as information sources but are also requested to join the local steering group. The key informants are: health workers, supermarket managers, teachers, social workers, community workers, representatives of leisure clubs and local inhabitants.

Focus group discussions

A focus group discussion or interview is a session with a small group of people discussing a specific topic. Groups are typically six to eight people who participate in the discussion for one-half to two hours. The participants are a relatively homogeneous group of people who are asked to reflect on questions asked by the interviewer. Participants get to hear each other's responses and to make additional comments beyond their own original responses as they hear what other people have to say. It is not necessary for the group to reach any kind of consensus, nor is it necessary for people to disagree. The object is to get high-quality data in a social context where people can consider their own views in the context of the views of others. Focus group discussions have several advantages when used for programme evaluation purposes but can also provide important insights for needs assessment. It

is a highly efficient qualitative data collection technique. In one hour the researcher can gather information from eight people instead from only one person. Focus group discussions can also provide some quality controls on data collections because participants tend to check and balance each other thus weeding out false or extreme views. Based on these considerations focus group discussions in the SUPER project were carried out:

- as a means to discuss local needs and solutions with key informants during the preliminary research;
- to exchange thoughts about the organizational aspects and output of the activities with groups who participated in certain programme elements (*e.g.*, a cooking course or a tasting session); and
- to discuss the outcomes of the baseline or follow-up survey (individual level). These discussions were carried out with respondents of the survey who had indicated that they were willing to collaborate with the group discussions. This so-called participant checking was carried out to test the data, interpretations and conclusions of people with whom the original information was constructed. If the reconstructions by the inquirers were recognized by the group of participants as adequate representations of their own realities, the credibility of the findings was much more supported (Koelen & Vaandrager, 1994). Some more concrete examples of how this has been done are discussed in chapter 7 (Eindhoven) and chapter 8 (other cities).

Other methodologies which have been used at social or community level, but have only been carried out in one or two cities are:

Cohesion

To support programme planning additional questions measuring cohesion were included in the baseline survey for Croxteth (a project area in Liverpool) (Röling & Smit, 1993). Cohesion is defined as: 'the powers in a social system that are keeping the individuals inside the system' (Weenig, 1991). According to Weenig cohesion consists of the components 'neighbouring' and 'sense of community'. They contained the following elements:

Neighbouring:

- interaction: How often does each resident talk and pay visits to other neighbourhood residents?
- Social support: On what occasions would residents turn to their neighbours for help?

Sense of community:

- Identification, belongingness: To what extent do residents feel at home in their neighbourhood, and have become attached to it?
- Shared emotional connection: To what extent do respondents believe that residents show solidarity with each other?
- (No) shared sense of relatedness: To what extend do respondents believe that residents lack in mutual involvement?
- Pressure to conform: To what extent do residents discuss behaviour of other residents ('gossip') and to what extent do they disapprove of deviant behaviour?

The reason to measure cohesion is that it is assumed there is a relationship between the amount of cohesion in a social system and the diffusion of information, the possibilities of changing knowledge, attitudes and behaviour (Weenig, 1991). Information can be circulated quicker if the system is cohesive than if there are no contacts. Furthermore, social influence on behaviour (nutritional behaviour in this case) would be larger in a more cohesive system. This can also have a strong negative effect if, for example, strong cohesive groups start reacting against the issue concerned. If cohesion hardly exists one could ask if a more individual approach would be more appropriate.

RAAKS

The RAAKS (Rapid Appraisal of Agricultural Knowledge Systems)-methodology (Engel, 1995) is designed to study the Knowledge and Information System. The method can help to generate an interactive process of reflection amongst key decision makers within an organization or sector, and to direct this process towards the identification of possible ways and means to improve its knowledge generation, transformation and utilization capacity. It also helps to perform an opportunity analysis, in order to determine what actions or interventions can improve the functioning of the system. The over-all objectives for the use of the RAAKS method can be summarized as follows:

- to reflect upon the way social actors interact in social learning and innovation within a certain domain of human activity in order to identify constraints and opportunities for intervention aimed at improving the adjustment, effectiveness and/or efficiency of their Knowledge and Information System;
- to identify (potential) actors who (may) act upon and effectively make use of these opportunities; and
- to create awareness of constraints and opportunities, in favour of decision making concerning knowledge policy and knowledge management, amongst (key) actors, such as managers, policy makers, producers, traders, researchers, extension workers, and other (target) groups (Engel, 1995).

In Horsens and Valencia RAAKS was used to identify existing networks and possible collaboration structures within the food sector. In Horsens RAAKS was carried out in addition to the baseline survey (Adolfse, 1992). The project workers in Horsens were of the opinion that they had to look at a wider range of actors than actors only relevant to a small community. In Valencia RAAKS was not applied until after problems with the health promotion approach were experienced (Boonekamp, 1993). A first pilot intervention had not been very successful. Project workers attributed the limited success to a lack of involvement of important actors. They decided to pay more attention to research supporting collaboration. In Valencia RAAKS was therefore not only used as a tool of analysis but also as a tool to initiate the collaboration process.

The sectors included were the health sector, the educational sector, food distribution, research, consumer organizations, mass media, policy makers, consumers and food producers. Studying the knowledge and information systems can provide insight into the following questions: Who are the actors, what is their link to the food sector, what kind of knowledge do they have or lack, what kind of relationship do they have with each other and how intense are these relationships?

The analysis was realized through personal interviews with the key actors within the selected organizations. All the interviewees were invited to a workshop in which the results of the analysis were presented in order to validate the information. Besides presenting and discussing the results a first step in building a collaboration-strategy was made. Since for Valencia the main aim was to find an organization structure, perhaps the concept 'Coordination Network' would be more suitable than 'Knowledge Network'.

6.7.2 The quality of collaboration: the participation measurement

In chapter 4 it was demonstrated that community participation and intersectoral collaboration are perceived to be important elements of health promotion. Starting from the systems perspective of health promotion active sharing of information between the different subsectors in the health system is an important prerequisite to facilitating change. The organized efforts include creating community awareness, joint problem analysis, consensus building about possible solutions, planning and implementation. The focus is on a total population rather than on specific risk groups and possibilities for changes in the social and physical environment are examined. Community structures such as schools, health centres, neighbourhood centres etc. are involved and often management and responsibilities lie with representatives from different sectors and volunteers who become involved. Health promotion activities which are situation-specific and based on local needs and possibilities are planned

and carried out. All this is meant to create and use opportunities within the structure in which people live.

Participation has often been measured as if it were some monolithic phenomenon, not taking into account the wide range of settings in which participation occurs nor the wide varieties of forms of participation. Therefore impact has most often been assessed by the numbers of participants taking part in programme activities. Other quantitative indicators which researchers have used are:

- the target groups who are reached;
- a count of opportunities to set up activities;
- % of inhabitants which are members/users of the community organizations;
- number of collaboration structures; number of members, member growth and number of people attending meetings;
- number of tasks of each participant;
- amount of time people spend on the programme;
- number of trained people within the project; and
- number of contacts between the groups.

However, this kind of quantitative data, how important they may be, do not reveal what has happened, how the process took place and how it can be improved. Often little emphasis is placed on analyzing the process of programme development and implementation, particularly where this process has involved community organization activities. As a result, the factors affecting programme development and implementation and their relationship to outcomes remain poorly understood.

Qualitative indicators can be important to understand and discuss community participation. Rifkin and colleagues (Rifkin *et al.*, 1988; Bjärås *et al.*, 1991) have developed a method, using a pentagram model, for assessing community participation in health programmes. Rifkin studied many projects aimed at involving different sectors and the public. She found that the following indicators for participation play an important role:

- needs assessment (How are needs identified?);
- leadership (Which groups are represented?);
- organization (How are goals achieved?);
- resource mobilization; and
- management (How does the organization achieve its goals?).

These indicators can be used for measuring participation at a different time in the same programme, by different assessors of the same programme or by different participants in the same programme. To find a point which can be used for comparison at a later time can be very useful. Therefore, she developed a continuum with wide participation at one end and narrow participation at the other. On the

continuum a point can be marked which most closely describes participation in the assessed programme at a given time. The five indicators are visualized in a so-called 'spiderweb' model.

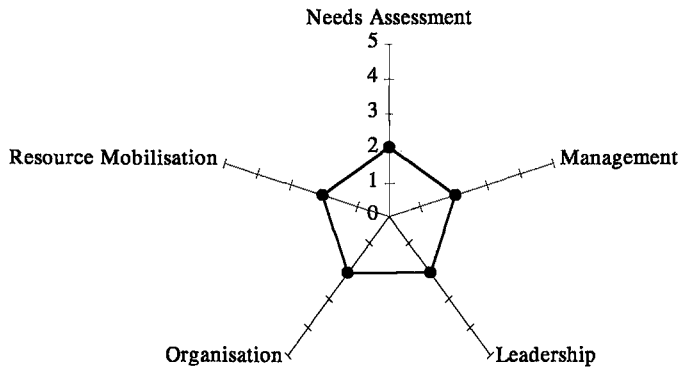

Figure 6.4 The spiderweb model

Within the SUPER project the participation measurement model of Rifkin was applied and adapted to the specific situation of the SUPER project. To decide where to plot on a five-point scale for the indicators (needs assessment, leadership, organization, resource mobilization and management) questions were chosen from the original model (Rifkin *et al.*, 1988). These questions are guidelines for evaluators to enable them to develop their own questions for each specific programme.

The participation measurement tool was used for the first time at the annual business meeting of the SUPER project in Liverpool in 1993 (Vaandrager *et al.*, 1993b). During these meetings the participating cities come together to discuss state of art, planning, development and continuation of the SUPER project. The aim for using the tool during the meeting was threefold:

- to test if the tool was suitable for internal evaluation and stimulating the discussion;
- to examine how intersectoral and community participation had been applied in the different project cities and how this can be improved; and
- to motivate project cities to use this tool in their own cities.

It was decided to define narrow participation as: 'mainly professionals are in charge' and wide participation as 'views, objectives & needs of all different participants (inhabitants, professionals, commercial people, voluntary groups etc) are represented'.

The representatives of each city were asked discuss the questions and choose the present position on the continuums of the indicators. They had to do the same exercise for the desired situation. To clarify their choice the representatives worked in groups and afterwards the spiderwebs were presented and discussed in the general meeting. This tool is not meant to describe the actual situations, but the situations as perceived realities. The outcomes were consequently less important than the actual process of using this tool as a reflection and agenda setting instrument. In Eindhoven this exercise has been repeated for the local project.

6.8 The project as a whole

The project can be seen as a comparative study, consisting of 5 case-studies. Conducting the project in different experimental situations, allows to study multi-sectoral and multi-organizational activities in daily life situations. Comparison of the achievements of each city has the potential to draw conclusions about processes in force in health promotion projects. This offers prospects to develop strategies which would be useful in any other European city. Furthermore, if the project fails to reach the targets, comparison makes it possible to sort out other measures necessary to achieve the goal of improving nutritional behaviour.

An attempt will be made to draw conclusions related to the themes of the Ottawa Charter (WHO *et al.*, 1986):

1. building public policies which support health (getting nutrition on the agenda of non-medical sectors as well);
2. strengthening of community action (involvement in planning, execution and evaluation);
3. development of personal skills (knowledge, attitudes, practice);
4. creation of supportive environments, where the healthy choices are the easy choices (structural impact); and
5. reorientation of health services towards health promotion (is this happening, *e.g.*, dietetics moving to community nutrition).

Besides learning points for practice, the project as a whole also has many clues to improve health promotion research. The following aspects are considered:

- the quality indicators for scientific health promotion research;
- the role of the researcher in health promotion projects;

- advantages and disadvantages of new research techniques at environmental and social level such as supermarket inventories, RAAKS and participation measurements; and
- triangulation: how to combine and use outcomes of different techniques.

In the following chapter, process, research and outcomes at the three different levels will be described in detail for the project in Eindhoven. In chapter 8 these experiences will be compared with developments and courses of the project in the other four cities and outcomes of the project as a whole will be described.

7 Project development, implementation and evaluation in Eindhoven

7.1 Introduction

As explained in chapter 6, the process of development, implementation and evaluation will be described in full detail for Eindhoven only since it is impossible to do this for all the cities. The reason to choose Eindhoven is not because it is the 'best example' of the five cities but because the author of this doctoral dissertation has been most closely involved with the project in this city. The description of the process in the other cities (chapter 8) will be focused on differences and similarities compared to the project in Eindhoven and the implications this had for the course of the project as a whole.

This chapter describes the process, research and outcomes of the SUPER project in Eindhoven. Figure 7.1 shows an overview of the research and project-activities in the course of time. As described in chapter 5 it was agreed to chose two project areas in each city which had different socio-economic characteristics. The Municipal Public Health Services decided to choose Achtse Barrier (AB) and Kruidenbuurt (KB); AB being classified as high socio-economic and KB as low socio-economic.

The project was initiated before it was known that the Dutch 'Praeventie fonds' would subsidize the research part of this project (July 1991) and continued after this funding-period was at an end (January 1995). Besides the willingness of the steering group to continue an important reason for continuation was the fact that the Municipal Public Health Services appointed a local co-ordinator for the project who is also responsible for another health promotion project. The former co-ordinator had to do this co-ordination task beside his usual job.

During different phases of the project in Eindhoven research was carried out at individual, environmental and community/organizational level (see chapter 6). In chapter 5 it has been explained that research and action within the SUPER project are closely interrelated and that the distinction of separate phases and levels is quite superficial. Furthermore, what happens in the first phase of the project influences the second phase and so on and in a later phase project workers often go back to an earlier phase, for instance, to adjust objectives or to redefine methodologies.

However, to give some structure to the description of the course of the project it was decided to cut the project in three sections related to phases in the development of the project in the course of time: 'take-off', 'try-out' and 'reflection'. This division differs from the original four phases (preliminary investigation, programme development research, research to support and guide the process and evaluation) as described in chapter 5. The reason for this is that in practice preliminary and programme development research are strongly interrelated and both are relevant during 'take-off' as well as during 'try-out'. Figure 7.2 gives an overview of the type of research carried out in each of the phases.

Mar 1991 - September 1991	Community analysis
Sep 1991 - up to date	Steering group meetings
Nov 1991	Baseline survey
Jan 1992	Supermarket inventory
Jun 1992	Pilot of stands in supermarkets
Sep 1992	Community fair in AB and KB
Nov 1992	Stand in supermarket KB
Dec 1992	Stand in supermarket AB
Jan 1993 - June 1993	Activities in several settings and for various groups linked to the national Fat Watch campaign
Mar 1993	Evaluation of supermarket activities
Jun 1993	Participation measurement
Sep 1993	Development of local nutrition promotion policy document
Sep 1993	Community fair in AB
Nov 1993	Follow-up survey: baseline repeat
Jan 1994	Repeat of supermarket inventory
Mar 1994	Focus group discussions
Jan 1994 - up to date	Appointment of co-ordinator, continuation of successful activities and development of new activities, diffusion to other neighbourhoods

Figure 7.1 Time schedule of research and project activities in the course of time

Level	*Take-off* (91/92)	*Try-out* (92/93)	*Reflection* (93/94)
Individual	baseline survey (Pretest) pilot of activities	evaluation of supermarket activities	follow-up survey: baseline repeat (Posttest)
Environmental	situation analysis supermarket inventory		repeat of supermarket inventory
Community/ organizational	interviews with key informants & focus group discussion	participation measurement	focus group interviews

Figure 7.2 Overview of the type of research carried out in Eindhoven

For each of these sections design and results are reviewed followed by a discussion of the methodologies and implications of the results. Prior to further discussion of these three sections it is necessary to provide some background information about the city Eindhoven, the local health and nutrition situation and some characteristics of the two project neighbourhoods.

7.2 Background of the SUPER project in Eindhoven

7.2.1 Introduction

A review of local and national literature was carried out to gather background information about the city and the inhabitants. The information related to the city of Eindhoven, incidence of diseases which are known to be related to nutrition, patterns of eating and food choice and socio-economic data was obtained. Outcomes of the literature review at national level have already been described in chapter 2. They will therefore only be briefly mentioned in this chapter.

7.2.2 Description of Eindhoven

Eindhoven is situated in the provence of North-Brabant (south-east of the Netherlands). Eindhoven was formed by a merging of five small villages and is now the fifth city in the Netherlands with a population of approximately 200,000 inhabitants. One of the reasons why Eindhoven grew so rapidly was the arrival of Gerard Philips and his successful enterprise in 1891. Most people (48%) are working in the secondary sector (industry, construction, etc.), in which Philips and DAF cars take the biggest part (Municipality of Eindhoven, 1987). During the last few decades, the tertiary sector (social services, education, banking and insurance business, etc.) has grown strongly. As a result, the structures of employment and business of Eindhoven have become more differentiated.

As for employment in Eindhoven itself, 10% of the men and 17% of the women are unemployed. Of all inhabitants, 6.1% have foreign nationalities. Unemployment is especially high amongst Turkish and Moroccan citizens of which 1 out of 3 is unemployed. The total unemployment rate is about 30% higher than for the whole of the Netherlands (Jansen, 1987).

In 1988 the WHO nominated Eindhoven as project city in its Healthy Cities Project. The project is based at The Health Promotion Department of the Municipal Public Health Services (Kamp & Cosijn, 1992). In 1990 it was decided to join the SUPER project which is carried out within the framework of the Healthy Cities project.

Reasons to go ahead were:

- nutrition becoming a more relevant health topic (see chapter 2);
- agreement with the fact that traditional ways of nutrition education clearly had limitations (see chapter 3 and chapter 4);
- a challenge to develop the health-promotion approach in the field of nutrition together with four other European 'Healthy Cities'; and
- advantages such as shared learning and new insights which could be used for other initiatives within the Healthy Cities project of Eindhoven.

7.2.3 Health and nutritional habits in Eindhoven

In 1991 the GLOBE (GLOBE=Gezondheid en LevensOmstandigheden Bevolking Eindhoven en omgeving: health and living conditions of the inhabitants of greater Eindhoven) investigation was carried out by the Erasmus University of Rotterdam together with the three Public Health Services of Eindhoven. In this survey it was found that the mortality and morbidity rates in Eindhoven are higher than the national average. The number of inhabitants of Eindhoven with cardiovascular diseases is 25% higher than the Dutch average. Cardiovascular disease is the cause of death for 41% of the male population and 12% for the female population. Cancer is a cause of death for 30% of the male and 26% of the female population. The Quetelet-index for overweight showed no differences between Eindhoven and the national average: 10 % of the inhabitants of Eindhoven are overweight or severely overweight (6%) (Municipal Public Health Services, 1994).

The national food consumption survey held in 1987-88 indicates only minor differences in food consumption related to heart disease between North Brabant and the rest of the Netherlands. Average fat-, cholesterol- and alcohol- intake per day is slightly higher. However, the ratio of polyunsaturated/saturated fat is more favourable in North Brabant than in the rest of the Netherlands. Saturated fat uptake is higher for North Brabant in the following products: fats, oils, sauces (such as gravy), nuts and snacks. Saturated fat uptake in cheese, cake, candy and cookies is lower than for the Netherlands (Hospers & Oosten, 1991).

7.2.4 The project neighbourhoods

AB is a suburb in the North of Eindhoven and KB is an inner-city area. KB was also a target area of the Poverty III project of the European Community (Centre for City Development, 1991). The needs assessment which was carried out for this project in KB pointed out that health and nutrition were important factors for the general well-being of the inhabitants. It was therefore decided to collaborate with the project workers of the Poverty III programme (Hoogstra, 1990).

AB is a relatively new neighbourhood, built in the seventies, whereas most of the houses in KB were built between 1931 and 1944. AB is mainly inhabited by younger families with children and most houses are owner-occupied. In KB most houses are rented and compared to AB there are many more elderly, students and foreigners. Income and education levels of people living in AB are higher in KB. Characteristics of both areas are described in table 7.1.

TABLE 7.1

Characteristics of the two areas

	AB	KB
Socio-economic status	high	low
Number of inhabitants	9609	5608
Sex		
male	51%	51%
female	49%	49%
Age		
0 - 19 year	34%	24%
20 - 44 year	43%	45%
45 - 64 year	20%	17%
65 year and older	4%	14%
Foreigners	2%	12%
Marital Status		
not married	45%	47%
married	50%	39%
widow/widower	2%	6%
divorced	3%	8%
Number of houses	3428	2327
% Owner-occupied	61%	25%
Composition of the population		
head of the family	27%	24%
spouse	25%	19%
children	36%	26%
others	13%	31%

Source: (Department for Research and Statistics, Municipality of Eindhoven, 1991)

7.3 Section 1: The take off

According to Bracht & Kingsbury (1990), successful implementation of community wide health promotion and intervention programmes depends on two interrelated activities. Firstly, an accurate analysis and understanding of community needs,

resources, social structure, and values. And secondly, early citizen and organizational involvement to build collaborative partnership and facilitate community participation. These two activities have also been carried out as 'the take off' for the project in Eindhoven. As described in chapter 6 the community analysis with respect to nutrition and food choice was carried out at community, environmental and individual level. These data were gathered to:

- identify key-actors which were believed to be important to become involved in the project and who could provide the project with useful background information;
- set up local steering groups; and
- be able to plan suitable and feasible nutrition promotion activities.

7.3.1 Exploring the social environment: talking with key informants and setting up steering groups

As a first exploration several open unstructured interviews were held with key informants. These were held to obtain insight in the 'sense of community' in the areas and to explore how key informants thought about the eating and shopping habits of inhabitants of the area. Key informants were representatives of several local professional organizations such as the foundation for community support, neighbourhood workers, domestic care, the home nursing service, the elderly associations, and representatives of several voluntary groups such as the welcome group, editors of the neighbourhood newsletter, children's activity group and patient groups. They were selected in consultation with the Health Promotion Department of the Municipal Public Health Services. The key informants were asked to give some characteristics of the area, give their views on eating habits of the inhabitants and reasons for existing eating patterns. In addition, a group discussion was organized for both project areas. For AB a representative of the welcome group (they visit new inhabitants), a representative of children's activities, a health visitor and a elderly visitor were present. For KB two representatives of the foundation for community support, a representative of the elderly association, a neighbourhood worker, a health worker and a women's worker were present. Topics of discussion were similar to those of the individual interviews so that outcomes could be compared and completed. Several comments made during the individual interviews were repeated in the group discussion which indicated that although they were personal opinions they still had reasonable validity.

AB was labelled a 'sleeping' area: during day time most people are at work while at night they are occupied with their own families. Due to busy jobs and the presence of young children it was generally felt that time (often because of double jobs) was an important factor when choosing food to eat. According to key informants ready-made meals and cleaned and cut vegetables were bought a lot. It was also remarked

that lack of time was an important reason for limited social contacts between the people living in AB and for the problems finding people willing to do voluntary community work. Some people thought that this was also the reason why in particular the elderly living in AB felt somewhat isolated. Furthermore, when spare time activities such as English courses or painting classes were organized the attendance was often low.

A community feeling seemed to be more present in KB. Inhabitants of this area were said to be well acquainted with the wide range of well attended activities organized by the community centres, social work and home health service. Amongst each other people seemed to have more contact than people living in AB and there were also more family ties within the area. The lack of cooking skills and the large amount of chips shops were mentioned as important factors influencing diet of inhabitants of KB. Some people were especially concerned about the high consumption of sweets amongst children in KB. Furthermore, the idea existed that foreigners living in the area would eat healthier than the Dutch inhabitants.

The personal interviews and the group discussion produced valuable information about what at that time was the general opinion about the project areas and which issues related to nutrition were felt to be relevant to the project areas. Furthermore, it was an introduction to setting up the steering groups. The local co-ordinator (an employee of the Department of Health Promotion of the Municipal Public Health Services), the co-ordinator of the Poverty III programme (an employee of the Foundation of Community Support) and the project researcher (author of this doctoral dissertation) took the initiative to set up the steering groups. The people approached were key informants who had indicated interest in participating. Organizations mentioned by key informants to be important and who needed to be involved were also approached. For both areas the supermarket managers, dieticians, teachers or headmasters, members of patient groups, volunteers and workers of the community centres (women, children), foundation for community support, health centres, the home nursing services and elderly associations were invited to take part in the planning meetings. Representatives of the community centres were contacted in KB only, because at that time, such centres did not exist in AB. Every six weeks the local co-ordinator organized a meeting to discuss research methodologies, findings, programme planning and tasks.

7.3.2 Exploring the physical environment: a situation analysis and the inventory in supermarkets

A number of factors in the physical environment influence food choice and access to and application of education about nutrition. These include the availability of healthful foods, strategically placed information about nutritional quality, policies, incentives to promote a dietary behaviour change, and access to sound nutrition

advice within the health care setting and in the community (Glanz & Mullis, 1988). The aim of the investigation at environmental level was to explore the local environmental potentials and barriers for the choice of food. There is no point in promoting healthy food, if healthy products are not accessible to people, that is, physically available and economically affordable (Hurren & Black, 1991). Settings where food is sold are supermarkets, restaurants, cafeterias and worksites. It was beyond the purpose of this project to study all these environmental influences and since research had pointed out that in-store decision making (*i.e.* choice of 'impulse' or unplanned purchases) accounts for nearly two-thirds of all purchases in supermarkets (see chapter 5), it was decided to study this setting in more detail. Furthermore, based on the Healthy Cities principles, it is important to have a link with pre-existing activities within the health care and community setting. Therefore, two preparatory activities were undertaken:

- identifying local shopping facilities and settings for nutrition promotion activities; and
- a more detailed study in supermarkets, which is referred to as the inventory in supermarkets.

The information which was necessary to identify local shops, services and organizations in the project areas was gathered from local documents. An important information source in AB was the neighbourhood calendar. This calendar is produced yearly and besides announcements of special events in the area, it includes a list of names and addresses of health, social and environmental services. The main source used in KB was the so-called 'social-map' (survey of social services, local shopkeepers and voluntary organizations) which is produced by the Foundation of Community Support.

Existing activities

At the time of analysis (1991) only a few nutrition promotion activities were carried out in AB. The home nursing services did try to start up a dieting club but it was cancelled because of lack of interest. The primary schools sometimes organized activities such as tasting each others home made dishes. In KB there were more existing nutrition promotion activities than in AB. In one of the two community centres cooking courses for foreign women, children and teenagers were frequently held. Furthermore, there was a weightwatchers club and some workshops about healthy eating for children had been organized in both community centres.

Local settings

The steering groups had identified local settings where they thought activities could be organized. These were the yearly community fair, schools, community centres,

libraries, supermarkets and speciality shops (*e.g.* butcher, bakery). It was investigated which activities were feasible for these different local settings.

The managers and a number of teachers of the primary **schools** of both areas were interviewed by a trainee of the Municipal Public Health Services to explore if they thought nutrition promotion activities for their schools were necessary and if so, what support they would need to organize these activities. Most managers and teachers said they or the school already paid attention to healthy eating in their existing programmes and the general opinion was that there was sufficient education material available. Furthermore, schools in KB were being reorganized so time for additional activities was very limited. Nevertheless, it was recognized that nutrition in KB, was an important issue of attention for the schools because teachers were concerned about the quality of the daily meals of the pupils. Based on these results it was decided to wait for the schools to organize activities in KB until after the reorganization. With schools in AB it was agreed that the Municipal Public Health Services would supply them with some ideas for activities which were easy to organize and not very time-consuming.

In 1992 the **community centres** in KB were supplied with cooking facilities so that they could organize cooking courses for different age groups. This was sponsored by the Poverty III programme. Since the community workers were experienced in organizing these courses it was just examined how the healthy food message could be incorporated in the courses. Therefore, a dietician helped with the design of the cooking courses.

The employees of the **libraries** in both areas agreed that during special action periods they could set up an exhibition existing of books and posters focused on nutrition.

In AB there are two **supermarkets**: SUP-AB1 and SUP-AB2. These are situated in two different shopping centres, where all specialist shops such as greengrocers, liquor stores, bakery, butcher and cheese shop are also concentrated. SUP-AB1, situated in the South of AB, is a large supermarket. SUP-AB2 is situated in the North and is smaller in size. In KB there are two supermarkets; SUP-KB1 and SUP-KB2. Furthermore, there are many specialist shops and there is a weekly market in the main square. SUP-KB2 is a more basic food store, whereas SUP-KB1 is a more fancy shop. They are both relatively small supermarkets.

Supermarket inventory

In all four local supermarkets (two in each area) an inventory was carried out to explore existing healthy nutrition promotion activities and possibilities for additional actions.

Design

To measure the full range of activities of a supermarket is very difficult and probably impossible. Therefore, a selection of indicators and food items was made. The indicators were: availability, price, promotion and information. The inventory focused on a selected amount of 50 packaged food items (milk and milk products, fats, pasta, rice, jam, crisps, packaged meals, soft drinks and beer), fresh food items (meat, meat products, cheese, bread, vegetables and fruit) and the health food section. The food items were selected as markers of the Dutch diet and were comparable with the ones included in the baseline survey (see next section). If possible, a 'less healthy' item and the 'healthy' alternative (*e.g.*, white bread and wholemeal bread) were chosen within each food group. The 'healthy' food items were products which were either low in fat, low in sugar or high in fibre. For fruit and vegetables it was recorded how many types were available. Price per weight (cheapest version), special offers or promotion (special placement, additional advertisement) was recorded for all the selected food items. For the selected packaged food items, nutrition labelling and health claims were also recorded.

As part of the inventory managers were interviewed. The managers were asked if they themselves could decide about prices and sales policy, what type of strategies they used to stimulate the sales, if they already had a policy to promote healthy food, if sales figures were available and if they were able to collaborate in a number of proposed activities. These activities were: more emphasis on healthy products (*e.g.*, special markers at the shelf), price reduction, distributing promotion material (leaflets, recipes, etc), cooking demonstrations and instruction of personnel. These were examples of activities which had been carried out in projects in the United States.

The inventory was piloted in two supermarkets in Eindhoven which resulted in some minor adjustments. Before the inventory was carried out permission was requested at the headquarters of the supermarkets involved. The inventories were carried out by two field workers who together took down the data in each supermarket. The average time to carry out the inventory was 75 minutes. To reduce the influence of time, all four supermarkets were visited within one week in february 1992.

The data of the four supermarkets were compared on availability, price, promotion and information. Prices of 'less healthy food items' and 'healthy' food items were added to make a comparison between the price of a 'healthy' shopping basket and a 'less healthy' shopping basket.

Results of the supermarket inventory

The selected food items were available in all supermarkets except one. This supermarket, situated in KB, had a smaller selection of 'healthy' prepackaged food items and a smaller variety in vegetables and fruit available.

A basket filled with 'healthy' products compared with a basket filled with 'less healthy' products was on the average 24% more expensive (see table 7.2)

In contrast with 'less healthy' products, 'healthier' products were hardly being promoted through price offers, specific placement or special emphasis.

Many of the packaged food items did not include information on critical nutrients (fat, sugar, fibre or salt). Nutrition labelling is voluntary and taken care off by food producers. Nutrition labelling is only mandatory when a nutrition claim (*e.g.*, 'low in fat) is made for a product (EEC, 1990). Labelling therefore, did not depend on the supermarket but more on the type of brands which were sold. Claims were only found on 'healthy' products which had full labelling according to the rules whereas many products high in critical nutrients such as sugar or fat did not have full labelling.

TABLE 7.2

Total price of a 'healthy' basket compared with a 'less healthy' basket (in Dutch guilders)

	'less healthy'[1] basket	'healthy'[2] basket	difference
supermarket 1 (KB)	59.08	82.40	23.32(28%)
supermarket 1 (AB)	63.46	77.57	14.11(18%)
supermarket 2 (KB)	62.24	79.36	17.12(22%)
supermarket 2 (AB)	61.02	82.81	21.79(26%)
mean	61.45	80.53	19.08(24%)

[1]full fat milk, yoghurt, fruit yoghurt, margarine, frying fat, pasta, white rice, jam, salted peanuts, fried noodles, cola, orange soda, beer.
[2]low fat milk, low fat yoghurt, low fat fruit yoghurt, low fat margarine, sunflower oil, wholemeal pasta, unpolished (brown) rice, jam with 35% less sugar, low fat fried noodles, cola light, orange soda light and alcohol free beer.

Interviews with the managers revealed that the managers of SUP-AB2, SUP-KB1 and SUP-KB2 were very much dependent on their head quarters for anything they wanted to do whereas the manager of SUP-AB1 was more independent.

It was decided to chose the SUP-KB1 as an experimental supermarket in KB. The manager of SUP-KB2 expressed concern about being an experimental supermarket because of limited space and restricted rules of his head quarters. Nevertheless, it was no problem to cooperate as control supermarket which meant that sales figures would be kept and interviews with shoppers could be carried out during the

intervention in the SUP-KB1. SUP-AB1 was chosen as an experimental supermarket in AB, mainly because the manager had most freedom of all supermarkets and because more activities were possible in this supermarket than in SUP-AB2. SUP-AB2 was therefore chosen as a control supermarket. Managers of the experimental supermarkets said they were able to participate in all the proposed activities except for price reduction.

An additional inventory was carried out in the **speciality shops** of KB since this was a specific request of the steering group in KB. The managers of these shops who were willing to participate in an interview (10 out of the 20 local shops) were visited by a trainee of the Municipal Public Health Services (Koning, 1993). The managers of these shops were asked about their activities in the field of nutrition promotion and were also asked if they thought they could play a role in the project. Most shops expressed that they felt what they could do was very limited and that supermarkets were a better place for activities since they sell a wider range of products. Furthermore, they said that people visiting a speciality shop, in contrast with people visiting supermarkets, had already made up their minds about what they were going to buy so they felt that influencing this choice was more difficult. It was decided that they would receive a list of ideas of what they could do in their shop together with a list of addresses of organizations which could supply them with promotional material about healthy eating.

7.3.3 Exploring individual behaviour, knowledge and attitudes: the baseline survey

At the same time of exploring the physical and social environment the baseline survey at individual level was carried out in both project areas. The aim of this survey was twofold (see chapter 6):

1. to gather information (existing consumption patterns and nutrition knowledge and attitudes towards healthy eating) about the starting point (Pretest) which could be used for the outcome evaluation (Posttest); and
2. to be able to plan the content of the nutrition promotion activities which are suitable for the local situation.

Design of the baseline survey

The Department for Research and Statistics of the Municipality of Eindhoven took a random sample of households of both areas (N_{AB}=401; N_{KB}=436). Since up to date the female or mother is often the person responsible for most of the cooking (Ekström, 1990), she was selected if the household was larger than one person assuming that her diet would reflect the diet of the other family members. The father was selected if he was single parent. The sample size was chosen because the

preliminary investigation in Valencia (Spain) had pointed out that this was a reasonable size to get an overview of the nutritional habits and to be able to compare different categories within the group (Vaandrager *et al.*, 1992a). Subjects were sent a letter by mail explaining that they had been selected for a personal interview about nutrition. Subsequently, they were contacted by telephone, and an appointment was made for an interview at the subject's home. If people were not at home the interviewers had to try to contact them at least at three different times during the day. At least three attempts were made to visit subjects with no telephone, or with an unlisted number in their homes. The interviewer checked if the respondents were truly the ones responsible for cooking within the household. If not, it was requested to interview the person who was. In AB 47 (12%) subjects of the sample could not be found because they did not live at the registered address or were not at home. In KB 83 (19%) of the selected subjects could not be found. It is known that KB has a higher turnover than AB which explains why the number of untraceable persons was higher. Excluding the subjects which could not be found, the response-rate in AB was 71% (N=253) and in KB 52% (N=183). Most people who refused to collaborate said they were too busy (24%) or not interested (28%). The higher non-response in KB is possibly due to the large number of surveys which have been carried out in that area during the last few years.

Table 7.3 gives an overview of the social-demographic characteristics of the respondents. These data show that the average age of the population interviewed in KB was higher, that their monthly income was lower, that unemployment was higher and that more respondents were living alone than in AB. It was remarkable that a larger group of respondents in KB had higher vocational training or a university degree than in AB, but when this was correlated with age it showed that this was mainly the younger population of KB who probably moved to this area as a student. On the other hand the number of respondents with only primary school was higher in KB than in AB.

The social-demographic characteristics of the group which was eventually interviewed were compared with the social-demographic characteristics of the whole original sample to determine possible differences. It appeared that the percentage of men (-5%) and foreigners (-3%) in the original sample was significantly higher than in the group which was interviewed.

TABLE 7.3

Social-demographic characteristics of subjects

	AB (N=253) % (n)	KB (N=181) % (n)
Sex		
Male	09 (24)	21 (39)
Female	91 (229)	79 (144)
Age		
Below 50 years old	80 (201)	69 (126)
Above 50 years old	20 (51)	31 (57)
Civil Status		
Married or living together	91 (229)	62 (113)
Single[1]	09 (23)	38 (70)
Income		
< 2,500 fl/month	19 (43)	72 (122)
> 2,500 fl/month	81 (185)	28 (49)
Education		
up to primary school	02 (04)	15 (28)
intermediate level	79 (201)	59 (107)
higher vocational training & University	19 (48)	26 (48)
Vocation (of women)	(N=229)	(N=144)
housewife	29 (67)	33 (48)
student	05 (12)	05 (07)
paid job	49 (112)	30 (44)
voluntary job	08 (18)	06 (08)
unemployed	05 (12)	16 (23)
retired	03 (07)	10 (14)

[1]including widow(er) and divorced respondents

Questionnaire design

The questionnaire was based on earlier studies within in the SUPER project in Liverpool (Vaandrager, 1989) and Valencia (Vaandrager *et al.*, 1992a), on other existing questionnaires (Dignan & Carr, 1987; Cameron & Staveren, 1989) and was adjusted for the Dutch situation. The questionnaire was designed to gather data on knowledge, beliefs and practice in the field of nutrition. Behaviour included shopping and cooking behaviour, eating habits and actual food consumption. Concerning nutrition knowledge and beliefs, it was decided to explore if respondents were aware of the relationship between diet and health, how they perceived their own health and if they thought they were able to eat a healthy diet (self-efficacy) based on the considerations of the theory of reasoned action, the health belief model and social learning theory (see chapter 3).

Shopping behaviour was measured by means of questions about frequency of shopping, kind of transport used for shopping and planning of shopping (making a shopping list or not and considering beforehand what is the maximum to spend or not). These data were collected to find out how respondents thought about accessibility of the local shops, if the food they wanted to buy was sufficiently available and affordable and how people thought about food and consumption. Furthermore, for 9 fresh food groups (milk, meat, meat-products, potatoes, vegetables & fruit, bread, sweets & biscuits, snacks and drinks) respondents had to indicate if they bought these items in the supermarket, in the market or at a specialist. This information was required to be able to assign supermarkets or shops for the supermarket inventory and to check if the assumption that most food (including fresh food) was bought in supermarkets was correct.

Eating habits were measured by means of questions about how many times a week respondents had breakfast, lunch and dinner, following a diet or not and frequency of dining out and buying meals in take-away restaurants.

Measurement of **Food consumption** of individuals or groups is difficult, time-consuming and therefore expensive (Cameron & Staveren, 1989). People do not only differ in their food intake, but also in the personal consumption of quite different food and amounts of food, on different days, months or years. Moreover, the existing methods, such as multiple-day diet records used for clinical and etiological research produce very detailed information which for studies on planning and effectiveness of community nutrition intervention programmes is not always necessary (Kristal *et al.*, 1990; van Assema, 1993). For nutrition intervention programmes dietary patterns and nutrition knowledge are more interesting data than the diet expressed in terms of nutrients. Nutbeam *et al.* (1990) recommend the practical approach to identify key food items which represent important sources of dietary fat, sugar, fibre etc. and to focus the assessment of changes in consumption on these food items. Therefore food consumption was measured by a food frequency list with 70 items which were selected as markers of the Dutch diet. The questionnaire was structured according to the Dutch meal pattern. Frequency of consumption was recorded per day, per week, or per month with a reference period of four weeks preceding the interview. The following food groups were included: fats, milk and milk products, meat and meat products, fish and fish products, bread, potatoes, rice, pasta's and pulses, vegetables and fruit, drinks, snacks, sweets, cakes and biscuits.

Nutrition knowledge was measured by means of statements with three response categories each: false, true and do not know. Furthermore, respondents were asked to indicate if bacon, vegetables, cheese, beer, orange and nuts contained many or few calories.

Beliefs towards a healthy diet and cooking, **perception** of own health and diet, **self efficacy**, and **influence of family members** was measured by means of statements with five response categories: totally disagree up to totally agree.

Procedure

Before going into the field 15 interviewers were trained on how to carry out the interviews. The training consisted of an explanation of the aims of the investigation, how the questionnaire was constructed and general rules for interviewing. Furthermore, the interviewers practised in groups of three: one as interviewer, one as the subject and one as observer of the examination. These role plays were then discussed in the group as a whole. Furthermore, 20 interviews were carried out for a pilot of the questionnaire after which it was modified in the light of the pilot findings. These modifications were mainly clarifications of some questions. It took about 45 minutes to complete an interview.

The analysis

Mean scores for intake, beliefs and knowledge were calculated for AB and KB, for experimental, control, age-, income- and education groups separately. The age groups under and over 30 were chosen based on the assumption that most people above 30 have a more stable life compared to people under 30 (students, not married, no children etc); the income groups up to 2,500 guilders/month and beyond 2,500 guilders/month were chosen because an income above 2,500 guilders/month can be considered as 'above the average' and the education groups up to or beyond primary school were chosen to be able to measure possible differences between respondents with only basic education and respondents with more training. Since analyses showed no differences between experimental and control groups these groups were not studied separately. Data are mainly presented in a descriptive way (frequencies and cross tabulations). The X^2 and t-test were performed to test differences. For beliefs, differences were studied by conducting a multivariate analysis for sex, age, area, education and income. For all analyses a p-value of <0.05 was considered as being statistically significant.

Results of the baseline survey

In AB 78% and in KB 32% go shopping by car. The frequency of shopping was similar in both areas (2-3 times a week). In AB more respondents (58%) make a shopping list compared to KB (42%). Most shopping was done in the local supermarkets but often fruit, vegetables, and bread was bought in specialist shops (greengrocer/bakery). Of the whole group, 15% is on a diet. In AB 17% and in KB 27% of the respondents bought ready-made meals outdoors at least once a week. One third of the respondents of both groups went out for dinner regularly (2-3 times a month). Eating breakfast (AB 81%; KB 72%) and lunch (AB 76%; KB 69%)

every day was higher in AB, eating dinner every day was higher in KB (KB 73%; AB 62%). In general the consumption of fish (average: 70 grams a week) and pulses (average: 1,2 serving spoons a week) was relatively low whereas fruit and vegetable consumption was relatively high (average: 11 pieces of fruit and 19 serving spoons of vegetables).

Respondents of KB had a significant higher consumption of frying fats, mayonnaise, white bread, fish out of tins and soft drinks whereas respondents of AB had a higher consumption of low-fat milk, low-fat yogurt, low-fat meat-products, low fat beef, rolls and pulses. Table 7.4 gives an overview of the average consumption of food items showing differences between the areas.

TABLE 7.4

Average consumption of food items/week significantly different between the areas

Food item	Unit	AB (N=253) mean (± sd)	KB (N=181) mean (± sd)	t-test p
frying fat	250 gr	0.5 (± 0.3)	0.7 (± 0.4)	< 0.05
mayonnaise	a table spoon	1.4 (± 1.7)	1.9 (± 2.9)	< 0.05
semi-skimmed milk	a glass	2.5 (± 3.5)	1.9 (± 2.5)	< 0.05
skimmed milk	a glass	3.1 (± 5.7)	1.9 (± 4.5)	< 0.05
skimmed yogurt	a bowl	1.8 (± 2.6)	1.1 (± 2.1)	< 0.05
low fat meat products	one dressed slice	6.1 (± 7.8)	4.9 (± 5.9)	< 0.05
low fat beef	100 gram	1.2 (± 1.2)	0.9 (± 1,0)	< 0.05
tinned fish	a tin	0.1 (± 0.5)	0.3 (± 1,0)	< 0.05
white bread	a slice	3.4 (± 9.1)	6.0 (± 12.4)	< 0.05
rolls	number	2.4 (± 3.1)	1.5 (± 2.4)	< 0.05
pulses	serving spoon	1.0 (± 1.8)	1.5 (± 1.5)	< 0.05
soft drinks	glass	2.5 (± 4.9)	5.0 (± 5.0)	< 0.05

It was found that the higher income groups (beyond 2,500 guilders/month) in AB consumed more skimmed milk, skimmed yogurt, low-fat meat products, rolls and alcohol than the higher income group of KB. The latter consumed more white bread and soup. The lower income groups (up to 2,500 guilders/month) in KB

consumed more sausage, fish in tins, pulses, fruit and cakes than the similar group in AB. Respondents above 30 years in AB more often consumed skimmed milk, cheese, low-fat meat products, wholemeal bread, and sweets than respondents above 30 years in KB. The respondents younger than 30 years in KB more often ate fish, pulses, nuts, soup and less cakes than the respondents younger than 30 years in AB. Respondents of AB with education beyond primary school consumed more skimmed milk, skimmed yogurt, low-fat meat products, low fat veal, wholemeal bread, rolls and candy and less pulses than respondents of KB with education beyond primary school.

Nutrition Beliefs

The nutrition belief statements can be divided in two groups: 'Health' and 'Healthy food/cooking'. The answers could be scored on a scale ranging from 1 (totally agree) to 5 (totally disagree). Manova was used to test on possible main effects for sex, age, area, highest education and income.

'Health'

1. What I eat influences my health.
2. I have a healthy diet.
3. In general I feel healthy.
4. People are able to influence their health.
5. A good health depends on good luck.

'Healthy food/cooking'

6. I cannot afford a healthy diet.
7. Cooking is a waste of time.
8. Preparing a healthy meal is difficult.
9. I take into account what other members of my household like/dislike to eat.
10. I would eat healthier if healthy food would be cheaper.
11. Healthy food is not sufficiently available.

Main effects for the 'Health'-beliefs

Analysis revealed a main effect on 'Health'-beliefs for area ($F_{5,423}=2.64$; $p<.023$), education ($F_{30,2090}=2.88$; $p<.000$) and age ($F_{15,1266}=6.40$; $p<.000$). No effect was found for sex.

The main effect of **area** can be attributed to the statements 'I have a healthy diet' and 'good health depends on good luck'. Table 7.5 shows that the respondents of KB more often had the opinion that they had a healthy diet and that a good health depends on good luck than respondents of AB.

TABLE 7.5

Means and univariate results of area and 'Health'-beliefs

Belief *	AB	KB	F(1,427)	p<
(2) I have a healthy diet	3.86	4.07	3.97	0.047
(5) A good health depends on good luck	2.42	2.84	8.38	0.004

*Measured on a scale ranging from 1 (totally disagree) to 5 (totally agree)

The main effect of **age** can be attributed to the variables 'I have a healthy diet', 'People are able to influence their health', and 'A good health depends on good luck' (see table 7.6)

TABLE 7.6

Means and univariate results of age and 'Health'-beliefs

	Age (in years)			F(3.424)	p<
Belief *	20-44	45-64	>65		
(2) I have a healthy diet	3.76	4.31	4.79	15.08	0.000
(4) Able to influence health	4.84	4.77	4.50	3.26	0.021
(5) Health depends on good luck	2.38	2.94	3.84	13.96	0.000

*Measured on a scale ranging from 1 (totally disagree) to 5 (totally agree)

Table 7.6 shows that older respondents more often agreed with the statement that they had a healthy diet and that good health depends on good luck whereas they were less convinced than the younger respondents that people could influence their health.

The main effect of **education** can be attributed to the variables 'What I eat influences my health', 'I have a healthy diet', and 'People are able to influence their health' (see table 7.7)

Table 7.7 shows that the higher educated were more convinced about the fact the what you eat influences health. Furthermore, respondents with little education more often agreed with the statement that they had a healthy diet and that good health depends on good luck than respondents with higher education.

TABLE 7.7

Means and univariate results of education and 'Health'-beliefs

Belief *	mavo[1]	lbo[2]	mbo[3]	havo[4]	hbo[5]	F(6.418)	p<
(1) Able to influence health	4.23	4.49	4.67	4.69	4.73	3.25	0.004
(2) I have a healthy diet	4.04	4.06	3.88	3.45	3.84	4.03	0.001
(5) Health depends on good luck	2.85	2.78	2.36	2.29	2.20	6.79	0.000

*Measured on a scale ranging from 1 (totally disagree) to 5 (totally agree)
[1]lower level of secondary school; [2]lower vocational training; [3]intermediate vocational training; [4]higher level of secondary school; [5]higher vocational training

Main effects for the 'Healthy food/Cooking'-beliefs

A significant main effect on the 'Healthy food/cooking'-beliefs was found for area ($F_{6,424}=3.73$; $p<.000$), age ($F_{18,1268}=1.75$; $p<.028$) and income ($F_{30,1935}=2.48$; $p<.000$).

The main effect of **area** can be attributed to the variables 'I would eat healthier if healthy food would be cheaper' and 'Healthy food is not sufficiently available' (see table 7.8).

TABLE 7.8

Means and univariate results of area and 'Healthy food/cooking'-beliefs

Belief *	AB	KB	F(1,427)	p<
(10) Eat healthier if cheaper	1.60	2.20	14.23	0.000
(11) Healthy food is not available	1.41	2.86	18.19	0.000

*Measured on a scale ranging from 1 (totally disagree) to 5 (totally agree)

Table 7.8 shows that respondents of KB more often agreed with the statements that they would eat healthier if it was cheaper and that healthy food is not sufficiently available compared with respondents of AB.

The main effect of **age** can be attributed to the variable 'I take into account what other members of my household like/dislike' (see table 7.9).

TABLE 7.9

Means and univariate results of age and 'Healthy food/cooking'-beliefs

Belief *	Age (in years) 20-44	45-64	>65	F(3,426)	p<
(9) I take into account what other members of my household like/dislike to eat	4.55	4.41	5.00	2.65	0.049

*Measured on a scale ranging from 1 (totally disagree) to 5 (totally agree)

Table 7.9 shows that older respondents more often agreed with the statement they take into account what other members of the household like/dislike.

The main effect of **income** can be attributed to the variables 'I cannot afford a healthy diet' and 'Healthy food is not sufficiently available' (see table 7.10).

TABLE 7.10

Means and univariate results of income and 'Healthy food/cooking'-beliefs

income / Belief *	<1,100	1,100 - 1,600	1,600 - 2,500	2,500 - 4,000	4,000 - 5,500	>5,500	F(5,386)	p<
(6) cannot afford healthy food	2.10	2.18	1.76	1.46	1.19	1.12	6.26	0.000
(11) healthy food is not available	3.00	2.64	2.07	1.72	1.17	1.04	11.42	0.000

*Measured on a scale ranging from 1 (totally disagree) to 5 (totally agree)

Table 7.10 shows that the lower the income, the more respondents agree with the statement that they cannot afford a healthy diet and that healthy food is not sufficiently available.

Nutrition Knowledge

The results show that in general nutrition knowledge was high although the two statements about the fat content of margarine, diet margarine and butter were answered incorrectly by the majority. The statements about potatoes and number of meals was answered correctly by 75% of the respondents whereas the statements about bread, risk of heart disease and cholesterol level were answered correctly by the majority (see table 7.11).

Respondents of KB more often incorrectly answered the statements 'Diet margarine contains less fat than margarine', 'Potatoes are fattening' and 'Three large meals is better for the digestion than five small meals' than respondents of AB.

Most respondents knew that bacon, cheese, beer and nuts are high in calories and that vegetables and oranges are low in calories although there were more respondents of AB who answered correctly (see 7.12).

TABLE 7.11

Percentage of respondents who answered knowledge statements correctly

	Statement is	AB (N=253) % (n)	KB (N=181) % (n)	X^2 (df=1)
Diet margarine contains less fat than margarine	incorrect	17 (43)	09 (16)	5.49,p<0.05
Margarine contains less fat than butter	incorrect	15 (39)	12 (21)	n.s.
Three large meals is better for the digestion than five small meals	incorrect	70 (177)	58 (106)	6.24,p<0.05
Potatoes are fattening	incorrect	77 (195)	65 (118)	7.71,p<0.05
White bread is less healthy than wholemeal bread	correct	87 (221)	84 (154)	n.s.
A higher cholesterol level can depend on the amount of fat in the diet	correct	90 (228)	87 (159)	n.s.
A diet containing too much fat can cause heart disease	correct	94 (238)	94 (172)	n.s.

n.s. =not significant

TABLE 7.12

Percentage of respondents who answered correctly if food item is high or low in calories

	High or low in calories	AB (N=253) % (n)	KB (N=181) % (n)	X^2 (df=1)
cheese	high	82 (207)	75 (137)	not significant
bacon	high	95 (241)	81 (148)	20.30,p<0.05
vegetables	low	98 (246)	86 (156)	20.22,p<0.05
beer	high	91 (230)	79 (143)	12.19,p<0.05
oranges	low	90 (228)	75 (136)	17.25,p<0.05
nuts	high	90 (228)	83 (151)	4.21,p<0.05

Conclusions of the baseline survey

Most respondents (75%) eat three meals a day. There are differences in food consumption between the areas. Income, age and education also influence food consumption. Income has influence on beliefs about availability and affordability of healthy food. Age and education have an influence on the belief in being able to influence health. On the average nutrition knowledge questions were answered correctly except for the questions about the fat content of butter, margarine and diet-margarine.

7.3.4 Review of the take-off

Posavac and Carey (1989) state that the measurement of needs and a situation analysis are prerequisites to effective programme planning. As they say, planning is, in fact, a form of evaluation, one that occurs before the programme is implemented. The choice of the different parts of the preliminary research was based on the assumption that nutritional behaviour depends on individual, environmental and social factors (see chapter 3). Information about how these factors influence nutritional behaviour was on one hand important to plan the content of the nutrition promotion activities and, on the other hand, useful to motivate the members of the steering group to take action in the field of nutrition. Furthermore, the data were collected so that there would be the possibility to compare them with the situation at a later phase (evaluation). Because research was carried out at three levels, the combination of findings produced a rich picture and it started a discussion amongst

the people involved about a wide range of possible nutrition promotion strategies. However, there were also some weaknesses in the approach.

Firstly, little attention had been paid to reasons for collaboration. The steering group consisted of participants with various backgrounds and they participated because of divergent reasons which had not been carefully explored at the beginning. It caused a lack of clarity about each others roles and often participants expected the co-ordinator to divide tasks rather than feeling responsible for any task. Furthermore, the objectives of the project and the reasons for collaboration were often questioned. However, these discussions were very useful in clarifying opportunities and constraints and created valuable learning situations. As a result, it was decided to pay more attention to collaboration aspects (see 'try-out').

Because there were more professional and voluntary organizations in KB there were also more people able and willing to participate in the steering group. From the beginning it was clear that the collaborative approach would be more successful in KB than in AB since people who live in KB were said to have close relationships and because of the larger number of community settings which were frequently visited by community members.

The choice to work on nutrition was a limitation for involvement of local inhabitants. It appeared that nutrition was more a concern of the local professionals than the local inhabitants. Only a few of them were interested to join the steering groups.

A further constraint was the difficulty of being able to interpret the outcomes of the baseline survey. Although the survey resulted in a large amount of data about knowledge, attitudes and behaviour, there was little explanation about these outcomes. For instance, the results indicated that most knowledge questions were answered correctly and that attitudes towards healthy eating were generally positive, but they did not explain why this did not result in healthy eating patterns. Nevertheless, outcomes were presented in the steering group and functioned as an incentive for people to discuss possible causes and to take action.

A concern was expressed about the validity of the findings of the baseline survey which was designed to collect local information on several aspects of individual behaviour related to nutrition. This concern was especially related to the measurement of food consumption. The outcomes were expressed in consumption figures at product level which meant that no statements could be made about diet in general. However, when the results are compared with the Dutch National Food Consumption Survey of 1992 (The Netherlands Bureau for Food and Nutrition Education, 1993) which included 6218 persons of the Dutch population aged 1-75 years there were corresponding outcomes. Table 7.13 shows a comparison of the

results of the Eindhoven study and the results of the Dutch National Food Consumption Survey.

TABLE 7.13

A number of figures of the Dutch Food Consumption Survey compared with the Eindhoven baseline survey

	Dutch Food Consumption Survey (1992) gr/day	Unit used in Eindhoven study	Dutch Food Consumption Survey (1992) Unit/week	Eindhoven Baseline Survey (1991) Unit/week
Milk and milk products	373	glass/bowl=150 gr	17.4	13.3
Meat products and poultry	111	100 gram	7.8	8.6
Fish	10	100 gram	0.7	0.7
Bread	138	slice/roll = 35 gr	27.6	27.6
Potatoes	118	1 potato = 50 gr	16.5	12.5
Pulses	7	serving spoon = 50 gr	1.0	1.2
Fruit	114	piece = 110 gr	7.3	11.0
Vegetables	128	serving spoon = 50 gr	17.9	19.4
Eggs	14	1 egg = 50 gr	2.0	2.0

Only product groups which were reasonably comparable were included. Unfortunately a comparison of fats was therefore not possible. This is a pity since fat intake is believed to play an important role in health and because the questions about the fat content were most often answered incorrectly. Furthermore, it must be kept in mind that most respondents taking part in the Eindhoven study were mainly women whereas respondents of the Dutch Food Consumption Survey were men and women. Compared with the Dutch Food Consumption study the consumption of meat & meat products, fish, bread, pulses, vegetables and eggs was similar. The consumption of milk & milk products and potatoes was lower. The consumption of fruit of the Eindhoven respondents was higher. Although this comparison is quite crude, it still gives some indication that the consumption figures found in the Eindhoven study were reasonably corresponding with the average Dutch food consumption figures. However, the non-response might have made the outcomes more positive than they really are; possibly people with an unhealthier diet were not interested to participate.

As stated before, it was found that the eating habits of inhabitants of AB and even more of KB could be improved. Besides unhealthier eating habits of inhabitants of KB compared with the inhabitants of AB they also scored lower on some of the knowledge questions and were less convinced that they could influence their own health. Nevertheless, respondents of KB were more convinced than respondents of AB that they had a healthy diet. The idea that good health was depending on good luck was in general stronger amongst older respondents and the lower educated. Concern about cost of healthy food was clearly related to respondents with lower incomes. This was a justified concern because forward in the results of the supermarket inventory it was found that the healthier baskets were on the average 24% more expensive. Based on these outcomes it was decided that:

- activities should be focused on healthy and cheap alternatives/meals, rather than focusing on increase of knowledge;
- consumption of milk products, vegetable oils, whole-meal products, lean types of meat, fish, chicken, pulses and healthy snacks should be promoted; and
- for some groups (elderly, lower educated) it was important to try and influence self-efficacy in the positive direction.

It is difficult to give a general judgement about the activities of a supermarket towards promoting healthy food, because from a nutritional point of view the overall diet is more important than single products and because of the large variety of products being sold in supermarkets. Nevertheless the supermarket inventory made it possible to get an impression of selling policies in a reasonably short time and it helped to convince supermarket managers that they could play an important role in promoting healthy choices. They were therefore willing to cooperate and proposed many ideas for activities.

7.4 Section 2: Try out

One of the advantages of the action-oriented community diagnosis was that the preliminary investigation did not only identify the needs, but also initiated resolutions and gave insight to existing linkages and ties in the community. This basis provided opportunities for the project steering group to develop interventions.

Based on the results of the take-off phase, the steering groups of both areas discussed the results and started to plan activities. A list of ideas for activities was made up and possibilities to execute these ideas were examined. Furthermore, it was discussed how these activities could be geared to one another. Steering group members decided to organize a combination of activities at different locations. The choice of these activities was based on the findings of the community analysis. Most activities were carried out in spring 1993 and they were linked to the national 'Fat-watch' campaign. Since the steering group was concerned about the fact that healthy

eating is associated with ideas like 'boring' and 'tasteless', it was decided to make the healthy food message attractive and pleasant and to focus on what food items could be promoted rather than on food items which should be restricted. It was also decided to focus on taste, skills, price and time.

In the following paragraphs activities and research during the second phase are described. All activities were reported including positive and negative experiences. The experiences were presented during the steering group meetings and functioned as an agenda setting tool for further activities. Due to practical limitations and since the effect of the overall project was being evaluated by the repeat of the baseline survey, it was decided not to measure the effectivity of each activity separately, but just to focus on the process. However, since organizing activities in supermarkets was relatively new and originally the starting point of this project (see chapter 6), it was decided to study the process and impact of these efforts in more detail. Since several people and organizations were involved, it was decided to evaluate the process of collaboration as well. This was done by means of the participation measurement tool (see chapter 6).

7.4.1 The course of the activities

The activities which were organized included media campaigns, promotion activities in supermarkets and activities in neighbourhood community fairs, special gatherings for Turkish women and the elderly, cooking courses and a contest for children and several exhibitions in different settings (see table 7.14).

Pretest in supermarkets

Because there was no experience with nutrition promotion activities in the supermarkets, it was decided to carry out a pilot with a stand which was manned by two students. In each of the two experimental supermarkets this stand was built up for a week. The stand was decorated with posters, leaflets and healthy food displays. Because healthy nutrition is often associated with tastelessness and restrictiveness (see chapter 3), it was decided to try and create a positive image of healthy eating by focusing on food which is good for health rather than on food of which the consumption has to be restricted. People could taste food, ask questions and take leaflets home. In each supermarket 60 shoppers leaving the supermarket and the managers were interviewed to evaluate the activity. In addition, sales figures were collected before, during and after the pilot intervention. Only a small percentage of shoppers had visited the stand (12%) and most of them were already interested in healthy nutrition. Nevertheless, 75% of the respondents thought it is important to focus on healthy nutrition at point of purchase. However, they said it was important to make clear that it was not a commercial stand trying to promote new products and that the stand was placed at a marked point, for example, near the till when shoppers

are waiting in line. Respondents were also asked what other type of activities they thought were useful in the supermarket. Labelling and additional signs at the shelfs were thought to be most helpful. There were many problems with collecting sales figures mainly because the supermarkets have different registration systems so outcomes were difficult to compare. The managers were satisfied with the way things had been organized and they thought it would be useful to continue exploring ideas for nutrition promotion at point of purchase (Illing & Kuyer, 1992).

Neighbourhood community fair

A stand was built up in both areas during their yearly neighbourhood community fair in September 1992. Volunteers of the areas manned the stands, visitors could participate in a healthy eating quiz, free samples of healthy snacks and leaflets were available and there was a special contest for children. Three local volunteers and employees of the Municipal Public Health Services decided to repeat the activity in 1993. They decorated the stand and developed a healthy eating contest. Local shop keepers sponsored the activity with healthy snacks. Children received carrots, handed out by a giant rabbit.

Compared to the stands in supermarkets this activity had some advantages. Visitors of the community fair had more time than shoppers. They were more likely to stop and ask questions, participate in the activities and the enthusiastic volunteers attracted many people. Volunteers who had participated in this event were satisfied about the course of this activity.

'Fun'-activity in the supermarket

The steering groups thought it a good idea to link a supermarket activity to a social event with the aim to draw attention to healthy alternatives in an enjoyable way. For KB the 5th of December Saint Nicholas festivity was chosen. A stand was built up in the supermarket with promotional material. 'Black Peter' (a character of this festivity) distributed colouring pictures, carrots, mandarins and gingerbread (as an alternative for sweets and chocolate which are usually eaten during this festive occasion) among the children paid for by the supermarket. Christmas was the theme of a similar event in AB where shoppers received booklets with healthy christmas recipes and they could taste healthy appetizers. Here father Christmas distributed the colouring pictures and healthy snacks.

It was learned that the objective of these activities had not been clear for everyone, because some people had associated it with a commercial activity instead of a health promotion activity. However, the combination of the activities with a social events was highly appreciated, had attracted much attention and people who had been dressed up as the characters reported it a great success.

TABLE 7.14

Overview of activities in AB and KB during the period September 1992 until September 1993

Target group	*AB*	*KB*
General Public	Media activities: showing weekly recipes on cable-television, newspaper articles, a newsletter, a radio-interview in supermarkets during cooking demonstrations	
General Public (april 1992)	Pilot of stand in experimental supermarket	Pilot of stand in experimental supermarket
General Public (Sep 1992)	Stand on neighbourhood community fair	Stand on neighbourhood community fair
General Public (Nov/Dec 1992)	Stand in the experimental supermarket linked to Christmas	Stand in the experimental supermarket linked to Saint Nicholas
Turkish women (Jan/Feb 1993)		Coffee mornings in the community centre & talking about nutrition
General Public (Mar 1993)	Several activities in the supermarket linked to the Fat watch campaign: recipes, leaflets, posters, shelf labels, competitions, fatmeter, cooking demonstrations	Several activities in the supermarket linked to the Fat watch campaign: recipes, leaflets, posters, shelf labels, competitions, the 'fatmeter'
Children (Mar-Jun 1993)	The contest in schools: 'no garbage in my lunch box'	A healthy breakfast for toddlers and Cooking courses for primary school children in the community centre; including a contest in the local project supermarket
Elderly (Mar-Apr 1993)	Healthy snacks during Bingo in the community centre	An informative meeting with a contest and healthy snacks in the centre for the elderly
General Public (Mar 1993)	Exhibition in library	Exhibition in library
General Public (Mar 1993)	Exhibition in Health Centre	
General Public (Mar 1993)	Exhibition in the department of child health of the Municipal Public Health Services	
General Public (Sep 1993)	Stand in neighbourhood community fair (one day)	

Coffee mornings for Turkish women

Two coffee mornings for Turkish women were organized in one of the community centres of KB. The women discussed eating problems and guidelines for a healthy diet. A Turkish employee of the Municipal Public Health Services was present to facilitate the discussions. Although both events were appreciated by the participants the attendance was low (5 women) which was probably due to a limited advertising of the activity.

Activities linked to the 'Fat Watch' campaign

An important priority of the Dutch government is the reduction of fat consumption (see chapter 2). The yearly one-month national 'Fat Watch' mass media campaign is an example in this field. To locally support the national efforts, activities were linked to this campaign. In the experimental supermarkets ingredients of the 'Fat Watch' campaign recipes were emphasised with special shelf labels and shoppers could watch cooking demonstrations and taste the results. The recipes were relatively cheap and easy to prepare. The price per person of these dishes was indicated on the project poster. Special information leaflets were available at point of purchase near milk products, vegetables and fruit, meat and bread. Information on the leaflets was focused on the healthy choice within this choice category (*e.g.*, wholemeal bread, low fat milk). Information tables were set up where people could take leaflets home and several nutrition contests were organized, for example, a healthy recipe contest. Two dieticians of The Netherlands Bureau for Food and Nutrition Education came for a day (in both experimental supermarkets for one day) to invite shoppers to have their fat intake calculated with the 'fatmeter'. The fatmeter, developed by The Netherlands Bureau for Food and Nutrition Education, is a software programme which gives consumers insight into their own eating habits in 2 or 3 minutes. A consumer has to fill in the form for food-consumption preferably of the day before the test. The dietician uses the barcode-pen, with which the computer reads and computes the data in a few minutes. Everyone who was interested received a computer printout with the results of their total intake of fat and calories and the dieticians gave additional advice or explanation.

In the **library** of each area, the local health centre of AB and in the department of Child Health of the Municipal Public Health Services an exhibition was set up. In a special corner books about nutrition and cooking were displayed and on several posters people could read which other activities were being organized in the area.

The community analysis had pointed out that the primary **schools** in KB were not able to organize additional activities until after the reorganisation and that schools in AB were only willing to organize activities that were not time-consuming (see take-off). The competition 'no garbage in my lunch box' which was developed and tested in another city in the Netherlands met this criterium. The Municipal Public Health Services supplied three schools of AB with competition forms and the teachers of

groups 7 and 8 (10-12 years old) distributed them among the pupils. The idea was that the children would give ideas to fill their lunch box with healthy food for lunch. A total of 80 forms were handed in. The Municipal Public Health Services organized a special gathering in a local museum for the distribution of prizes. Both teachers and pupils reported that they thought it was a beneficial event. Since then the competition has been carried out in several other areas of Eindhoven.

In KB community workers organized two cooking courses for **children** in the **community centres**. Part of this course was a special contest in the experimental supermarkets after closing time. The children of the cooking course had to work out the fat percentage or vitamin content of selected products. Together with parents, community workers also organized a healthy breakfast event for the toddlers.

The elderly association organized a special afternoon for the **elderly** in a **community centre** of KB. A dietician explained special points for attention for nutrition of elderly. The visitors could taste healthy snacks and a nutrition quiz was held. The afternoon was a success because according to the elderly association attendance was high (53 visitors). There was also a small group which wanted to continue these type of gatherings on a more regular base. A similar activity was organized in AB, but was linked to a Bingo-afternoon of which it was known that there was always high attendance. Many people indeed turned up, but combining this with Bingo had the disadvantage that there was not much time left for the nutrition activities. It was concluded that it was not necessary to link these type of activities to 'fun'-gatherings for the elderly because the gathering in KB had shown that attendance for a meeting focused on nutrition only could be high as well.

7.4.2 Evaluation of activities in supermarkets

As described previously, activities in the supermarket were evaluated in more detail. The objectives of the activities in the experimental supermarkets were as follows:

- to create awareness for the project among shoppers as well as personnel;
- to increase nutrition knowledge of shoppers;
- to secure a positive attitude of shoppers towards healthy nutrition; and
- to incite shoppers to use recipes from the campaign for cooking at home.

An effect and a process evaluation were carried out to see if these objectives were achieved.

Design of the effect evaluation of the supermarket activities

The design used was the untreated control group design with separate Pretest and Posttest samples (Cook & Campbell, 1979). During the week preceding and during

the week succeeding the activities shoppers of both the experimental and control supermarket were approached for an interview. Interviews were carried out on different days and times of the week. To control for a possible learning effect of the interview, an additional group of 80 individuals were interviewed in the experimental supermarkets (40 in AB and 40 in KB) before as well as after the intervention (one-group Pretest-Posttest, see table 7.15). In addition, sales figures of the food items (chicken, pulses, lean minced meat and cod) recommended in the recipes, were collected before, during and after the intervention.

TABLE 7.15

Number of interviews carried out during the evaluation of the supermarket activities

Interviews with shoppers	Baseline week 8	Action 1 week 9	Action 2 week 10	Action 3 week 11	Action 4 week 12	Posttest week 13
Exp (AB)	40 (OAX_{11})	25 (YAX_{11})	25 (YAX_{22})	25 (YAX_{33})	25 (YAX_{44})	40 (OAX_{12})
Exp (AB)	40 (OAX_{21})					40 (OAX_{32})
Ctr (AB)	75 (OAC_{41})					75 (OAC_{52})
Exp (KB)	40 (OKX_{11})	25 (YKX_{11})	25 (YKX_{22})	25 (YKX_{33})	25 (YKX_{44})	40 (OKX_{12})
Exp (KB)	40 (OKX_{21})					40 (OKX_{32})
Ctr (KB)	75 (OKC_{41})					75 (OKC_{52})

O-measurement= outcome-evaluation
Y-measurement= process-evaluation
C= control group, X= experimental group, A=AB, K=KB
OAX_{11} = group 1, experimental AB, baseline
OAX_{12} = group 1, experimental AB, follow-up
OAX_{21} = group 2, experimental AB, baseline
OAX_{32} = group 3, experimental AB, follow-up
OAC_{41} = group 4, control AB, baseline
OAC_{52} = group 5, control AB, follow-up

Subjects of the outcome evaluation

A total of 438 people were addressed for the Pretest and 316 people (72%) agreed to participate. In the experimental supermarket of KB response was highest (83%), followed by the experimental and control supermarket in AB (71% and 68%) and the control supermarket in KB (67%). For the Posttest 470 shoppers were addressed and

319 (70%) agreed to participate. Again the response was highest in the experimental supermarkets (80%), but this was to be expected since half of this group had already agreed to participate during the Pretest. Response in the control supermarkets in KB and AB was 67% and 51%. Taking Pretest and Posttest together, response was 70% which is high if one considers that people come to the supermarket to do their shopping and have to spend extra time to answer an unexpected questionnaire. When experimental and control groups in both project areas were compared there appeared to be only minor differences (not statistically significant) in background variables (see table 7.16).

TABLE 7.16

Social-demographic characteristics of the subjects (Pre and Posttest)

	AB Exp (N=130) n (%)	AB Ctr (N=144) n (%)	KB Exp (N=130) n (%)	KB Ctr (N=148) n (%)
Sex				
Male	23 (18%)	35 (24%)	45 (35%)	43 (29%)
Female	107 (82%)	109 (76%)	85 (65%)	105 (71%)
Task				
Housewife	65 (50%)	59 (41)%	52 (40)%	63 (43)%
Student	4 (03%)	6 (04)%	27 (21)%	29 (20)%
Employed	52 (40%)	63 (44)%	46 (35)%	42 (28)%
Unknown	9 (07%)	16 (11)%	5 (04)%	14 (10)%
Age (average ± sd)	43 ± 15	42 ± 13	42 ± 18	44 ± 18
Diet	(11%)	(14%)	(13%)	(20%)

exp= experimental group
ctr= control group

Questionnaire design

Nutrition knowledge was measured by means of statements with three response categories each: false, true and do not know. Beliefs were measured by means of statements with two response categories: agree and disagree. A list of the knowledge and attitude statements can be found in Annex I. Nutritional behaviour was measured by requesting frequency of consumption of the products which were recommended in the recipes: chicken, pulses, fish and low fat minced meat. Respondents were also asked if they were aware of the Healthy Cities project and the activities which had been organized in the past. These questions were the same in the Pretest and Posttest. The Posttest also included questions about the activities which were organized in the experimental supermarkets. Respondents were asked if they had

noticed the posters, recipes, special signs on the shelfs and leaflets, if they had tried recipes at home, if they had tasted the food of the cooking demonstrations and if they had had their fat intake calculated with the fatmeter.

Results of the outcome evaluation of supermarket activities

Table 7.17 shows that the familiarity of the Healthy Cities project, the SUPER project and the 'Fat Watch' campaign has increased in all groups and most strongly in the experimental group.

TABLE 7.17

Familiarity of the project

	Experimental group		Control group	
	Pre (N=171) %	Post (N=171) %	Pre (N=144) %	Post (N=148) %
Familiar with the Healthy Cities Project	34	60*	25	42*
Noticed the logo of the Healthy Cities Project	42	68*	42	47
Familiar with the SUPER project	15	50*	8	19*
Familiar with the 'Fat Watch' campaign logo	43	68*	43	63*

Pre= Pretest
Post= Posttest
*= significantly different from the pretest; X^2-test, $p < 0,05$

Respondents of the experimental as well as the control group were asked if they had noticed the activities in the experimental supermarkets. In all, one or more activities had been noticed by 194 respondents (61%). (83% in the experimental group and 35% in the control group). The posters and brochures were noticed most of all, followed by the product information leaflet, the signs at the shelfs and the cooking demonstration. Hardly anyone had noticed the competitions.

Knowledge and Attitude

Pre- and posttest pointed out that most knowledge statements were answered correctly by three quarters of the respondents. This was comparable with the findings of the baseline survey. Also most belief statements were answered positively. A total knowledge and attitude score was calculated. No significant change was found between pre and posttest for both experimental and control group.

It must be taken into account that since knowledge scores were already high before the intervention intervals are narrower at the ends than at the midpoint resulting in a ceiling effect (Cook & Campbell, 1979).

Another important point to be made is that 44% of the respondents of the control group had visited the experimental supermarkets. Consequently a comparison between control and experimental groups is difficult and not totally correct to measure the outcome. Therefore it was decided to do an additional analysis, taking both groups together and comparing outcomes of respondents who have noticed (awareness group) and who have not noticed activities (non-awareness group) with outcomes of the pretest.

The awareness group had a higher total knowledge and attitude score than the non-awareness group. Furthermore, the awareness group had a higher total knowledge score than the pretest group. The non-awareness group had a lower attitude score than the pretest group (see table 7.18).

TABLE 7.18

Total knowledge and attitude scores of Pretest and Posttest (excluding respondents who have been interviewed twice)

	Pretest N= 206	Posttest (+) N=130	Posttest (-) N=138
	mean (± sd)	mean (± sd)	mean (± sd)
Total Knowledge score[1]	6.9 (± 1.8)	7.3 (± 1.6)* #	6.6 (± 1.9)#
Total Attitude score[2]	7.0 (± 2.0)	7.2 (± 2.3)#	6.4 (± 2.4)* #

(+) respondents noticed activities / (-) respondents did not notice activities
[1]Total of all 9 knowledge statements, 0=incorrect, 1=correct
[2]Total of all 10 belief statements, 0=negative, 1=positive
* score is significantly different from pretest, t-test, $p<0.05$
# significant difference between awareness group and non-awareness group, t-test, $p<0.05$

It was, however, possible that respondents of the non-awareness group already had lower scores during the pretest. This could be analysed by comparing the group of respondents who had been measured before as well as after the intervention. It was found that knowledge and attitude scores were already significantly higher in the awareness group before the intervention. Furthermore, a significant increase in the attitude score was found for the awareness group.

TABLE 7.19

Total knowledge and attitude scores of Pretest and Posttest of respondents who have been interviewed before as well as after the intervention

	Pretest (+) N= 63	Posttest (+) N=63	Pretest (-) N=16	Posttest (-) N=16
	mean (± sd)	mean (± sd)	mean (± sd)	mean (± sd)
Total Knowledge score[1]	7.7 (± 1.2)	7.8 (± 1.1)	6.8 (± 1.2)#	6.9 (± 1.5)#
Total Attitude score[2]	7.4 (± 1.8)	7.7 (± 1.7)*	6.8 (± 2.0)#	6.6 (± 2.6)#

(+) respondents noticed activities / (-) respondents did not notice activities
[1]Total of all 9 knowledge statements, 0=incorrect, 1=correct
[2]Total of all 10 belief statements, 0=negative, 1=positive
* significantly different from pretest, t-test, # significantly different from awareness-group, $p<0.05$

To know if a learning effect had occurred, the awareness group who was interviewed before as well as after the intervention was compared with the awareness group who was only measured after the intervention. The results indicate that indeed a learning effect had occurred because the total knowledge and attitude score was higher in the awareness group which was measured twice ($KNOW_{double}=7.8$ and $KNOW_{single}=7.3$; $ATTITUDE_{double}=7.7$ and $ATTITUDE_{single}=7.2$; see table 7.18 and 7.19).

It can be concluded that the awareness group was already more interested before the intervention than the non-awareness group. In the awareness group the attitude score significantly changed positively. Furthermore, asking questions about nutrition made people who were already interested more alert and made them think more about the issues concerned.

Further exploration of changes in attitudes and knowledge

The increase in the total knowledge score of the awareness group was due to a larger number of respondents responding correctly to the statements 'pulses are low-fibre', 'minced beef is less fatty than beef & pork mince', 'once a week a meal without meat cannot do any harm' and 'I think the risks of a fatty diet are not so bad' (see table 7.20). The difference of the total attitude score between the awareness group and the non-awareness group was due to different scores on the statements 'I am interested in healthy food', 'Nutrition education is instructive', 'I am able to influence my own health', 'I pay attention to the fat content of my diet' and 'I would like to have more information about low-fat cooking methods'. Furthermore, significantly more respondents of the awareness group said to pay attention to the fat content of their diet (pre=57%; post=68%) and were interested in more information (pre=55%; post=69%) than the group of the pretest (see table 7.20).

TABLE 7.20

Significant changes for knowledge and belief scores between pretest and posttest (X2-test, $p < 0.05$))

	Pretest N=206 %	Posttest (+) N=194 %	Posttest (-) N=130 %
KNOWLEDGE			
Pulses are low-fibre	69	82	67
Minced beef is less fatty than beef & pork	85	88	78
Once a week a meal without meat cannot do any harm	92	98	88
I think the risks of a fatty diet are not so bad	75	79	58
BELIEFS			
I am interested in healthy food	89	89	81
Nutrition education is instructive	87	96	83
I am able to influence my own health	96	90	88
I find it hard to eat healthy	73	59	67
I pay attention to the fat content of foodstuffs I buy	56	71	45
I would like to have more information about low-fat cooking methods	54	68	45

(+) respondents noticed activities / (-) respondents did not notice activities

The number of students in the awareness-group was significantly lower than in the non-awareness group. The average age was therefore higher in the awareness group. Sex, area and being on a diet did not differ between awareness and non-awareness groups.

Influence of background variables

Men had a lower total knowledge score (men=6.5; women=7.2) and also a less positive total attitude score (men=6.2; women=7.2) than women. Respondents on a diet had a more positive total attitude score (no diet=6.8; diet=7.7).

Differences between KB and AB (single statements)

More respondents of AB knew that the statements 'pulses are low-fibre' (AB=60, KB=51%) and 'cod contains a lot of fat' (AB=78%, KB=51%) are incorrect than respondents of KB. In KB respondents reported to discuss nutrition with friends and family more often (52%) than respondents of AB (40%). This is in line with the findings of the community analysis for which it was found respondents of KB had more contact amongst each other in the area. Also more respondents of KB agreed with the statement that they would eat healthier if healthy food would be cheaper (KB=49%, AB=28%). The percentage of respondents agreeing with the statement

that they discuss their nutrition habits with family and friends has increased from 49% to 67% for respondents of the experimental supermarket in KB. Apparently the intervention has put nutrition on the agenda.

Consumption patterns and sales figures

In total 18% of the awareness group said to have prepared one of the proposed recipes at home but no changes were found in the consumption of chicken, pulses, fish and low-fat minced meat (the main components of the 'healthy' recipes). Also the sales figures had not changed.

The process evaluation of the supermarket activities

The process evaluation was carried out to assist programme development, to get insight in opportunities and constraints of working with supermarkets and to develop ideas for continuation. During the intervention, each week 25 people (not in the sample for pre- and posttest) in the two experimental supermarkets were interviewed to have their opinion about the organized activities. Table 7.15 gives an overview of the number of interviews carried out in each supermarket. The four supermarket managers and six members of staff of the experimental supermarkets (three per shop) were interviewed as well.

Subjects of the process evaluation

During the intervention 321 shoppers were addressed and 201 agreed to respond. The response in the experimental supermarket in AB (72%) was higher than in the experimental supermarket in KB (56%). Table 7.21 gives an overview of the background variables of the respondents.

In AB significantly more housewives were interviewed than in KB, whereas in this area more students were interviewed than in AB. The percentage of interviewed women and the average age are higher in AB than in KB. Because of these different background variables the influence of sex and age was also examined.

TABLE 7.21

Social-demographic characteristics of subjects

	AB (N=100) %	KB (N=101) %	X^2-test/t-test p
Sex			
Male	15	32	X^2-test; $p<0.05$
Female	85	68	X^2-test; $p<0.05$
Task			
Housewife	47	31	X^2-test; $p<0.05$
Student	3	24	X^2-test; $p<0.05$
Employed	37	43	
Unknown	13	2	
Age (average ± sd)	46 ± 15	40 ± 18	t-test; $p<0.05$
Diet	15	12	

Questionnaire design

The process evaluation mainly focused on the judgment of the promotional material. The respondents were asked to have a look at the materials and judge them on appearance, use, usefulness and visibility by means of five response categories, for example, not useful at all (1) up to very useful (5). Managers and staff were asked the same questions, but were also requested to motivate their opinion and involvement. Both shoppers and staff were asked to give a mark (between 0 and 10) for the total intervention and to give their judgment about the impact of the activities (on a five-point scale (1=no effect at all; 5= very effective).

Results of the process evaluation of the supermarket activities

All the materials were judged as useful and attractive except for the product information leaflet. Respondents were most positive about the Fat Watch brochure and the Fatmeter. On the average shoppers marked a 6.5 for appreciation of the overall intervention and the average score on impact was a 3 (out of 5). Respondents who had already noticed the material before being interviewed were more positive about appearance and usefulness than respondents who had not noticed them. The results of these are presented in table 7.22.

TABLE 7.22

Average judgement of materials (N=201)

	Noticed material		Appearance		Usefulness	
	AB	KB	(+)	(-)	(+)	(-)
	%	%	mean[1]	mean[1]	mean[2]	mean[2]
Poster SUPER	32	28	*3.5	3.0*	*3.8	3.3*
Poster Fat Watch	*46	22*	4.2	3.9	4.1	4.0
Fat Watch brochure	*46	20*	4.4	4.2	*4.5	4.2*
Signs on the shelfs	12	18	3.4	3.4	*4.2	3.8*
Competition	11	2	*3.8	2.8*	*4.0	3.1*
Product Information Leaflet	20	15	2.8	2.5	4.1	3.8
Fatmeter	*13	24*	*4.4	3.8*	*4.5	3.9*
Cooking demonstration	58	-	3.9	3.9	3.9	3.9

(+) respondents noticed activities / (-) respondents did not notice activities

[1] Measured on a scale ranging from 1 (very bad) to 5 (very good)

[2] Measured on a scale ranging from 1 (useless) to 5 (very useful)

* significantly different X^2-test and t-test ($p<0.05$)

Influence of background variables

Women judged the usefulness and benefits of the 'Fat Watch' brochure and product information leaflets more positively than men. The project poster and the 'Fat Watch' brochure had attracted more attention of women than of men. Issues such as age or being a student had no influence on the judgements.

Opinion of staff

On the average the staff was positive about the activities. The staff in AB marked the overall intervention higher (8.1) than the staff of KB (7.1). They were also more convinced about the effect (3.8) than staff of KB (2.8). The staff was also asked to give supplementary comments. Staff of AB replied that according to their opinion only half of the shoppers were interested in healthy eating. They thought especially people aged between 40 and 70 were interested. Many shoppers had asked them questions about the cooking demonstrations. They had felt involved with activities especially because their manager had explained what was going to happen. Staff of KB responded that many shoppers had asked them questions about the leaflets and the fatmeter. They were disappointed that it had not been possible to organize cooking demonstrations in KB. They were of the opinion that it is better to promote healthy food by means of tastings and demonstrations (active involvement) than by means of leaflets (written information).

Linking the results back to the aims

One of the aims of the intervention in supermarkets was to increase awareness of the project and materials. The results show that awareness indeed increased and that many shoppers had noticed (at least one) of the materials. All materials were judged as useful and attractive except for the product information leaflets. Students had been less interested and less aware of the activities. Although knowledge and attitude scores were already high before the intervention, respondents who had respondents did not noticed activities showed an increase in knowledge and a positive change in attitude. It must be noted, however, that people who are interested in nutrition are more likely to pay attention to it. These respondents also had a more positive judgement of material. It was remarkable that respondents who had been interviewed twice had a significant higher knowledge and attitude score than respondents who were interviewed for the first time. No change in behaviour was found but 18% of the respondents who had noticed activities had tried recipes at home. A number of findings were in line with the findings of the baseline survey and the community analysis; respondents of AB scored higher on a number of knowledge statements than respondents of KB while those of KB said to talk more about food with friends and family than respondents of AB.

Staff at the supermarkets had felt involved and were overall positive and content about the organization and contact with the Municipal Public Health Services. Staff at the experimental supermarket of KB were less convinced of the effectiveness of the activities than their counterparts at the supermarket in AB.

Overall, it was concluded that the collaboration between the supermarkets had been satisfying for both project workers and supermarket staff and that although some activities were less successful than others, in general the project had been successful not in the least by increasing awareness. Both project workers and supermarket staff realized the impossibility to change behaviour within one month of the activities and that recurrence, for example, a monthly healthy recipe, would be necessary to really achieve change.

7.4.3 Participation measurement

Intersectoral collaboration and community participation are considered to be important elements for the success of the SUPER project. Therefore, much emphasis has been placed on the process of involvement and collaboration. To examine how far this had succeeded and what could be improved, the participation measurement exercise (see chapter 6) was carried out in June 1993 with the people involved. It was decided to organize two workshops: one for volunteers and one for professionals. Groups have been split up because mixing the groups could mean an additional threshold for volunteers to attend the workshop or to speak openly about the organization.

The participation measurement for volunteers

The volunteers were invited to attend a meeting. During this meeting they were requested to fill out a questionnaire. These volunteers comprised of people who had planned and/or organized one or more of the activities. A total of 21 people received invitations by mail and were subsequently contacted by telephone. Thirteen people confirmed that they would attend. Eventually only 6 people turned up 3 of KB, 3 of AB. The reason for the low attendance is not completely clear, but a possible explanation is that the meeting was held in the building of the Municipal Public Health Services which is not situated in one of the two areas so people had to travel quite far.

The questionnaire consisted of open-ended questions about what they thought of the approach, if the goals were in agreement with the needs of the project area and how the involvement of local inhabitants could be improved.

The workshop of volunteers started with an explanation of the project followed by a video of the project activities. After this a small questionnaire was handed out and those present were asked to discuss the questions within smaller groups.

The fact that only a few people attended the meeting of the volunteers indicated that it was difficult to get local inhabitants actively involved. This was also stated clearly by the volunteers themselves. Nevertheless, the volunteers said that the approach was useful, although they thought the expectations of the professionals were too high. Having local people handing out healthy snacks or distributing information was already seen as an achievement. General practitioners and sports clubs had not been involved in the project activities and this was seen as a disadvantage.

The participation measurement for professionals

The invited professionals were members of the two steering groups still involved (supermarket managers, a dietician, social and community workers, health workers and educational staff) or people who had been originally involved but were no longer at the time of the meeting. 33 people received an invitation by mail and were subsequently contacted by telephone. Eventually 13 people turned up and most of them were members of the steering group of KB. Seven people who were unable to attend the workshop returned the completed questionnaire. Five people were unable to attend due to holidays, pregnancy leave or change of jobs. Due to work obligations none of the 6 headmasters of the primary schools and none of the 4 supermarket managers were able to come although 1 headmaster and 2 supermarket managers replied by mail. Three people stated that their involvement had been very minor.

Questionnaire Design

The questionnaire consisted of introductory questions about the indicators *needs assessment, leadership, organization, resource mobilization* (*human* and *financial resources*) and *management*. These questions were chosen from the original approach of Rifkin *et al.* (1988) and were adapted for the Dutch situation.

Procedure

The professionals received the questionnaire beforehand. During the workshop a discussion took place about the indicators in three small working groups. Besides discussing the results of the participation measurement for volunteers, these groups were asked to decide about the points on a continuum (five-point scale; wide participation at one end and narrow participation at the other) for the indicators which most closely describe participation for the project in Eindhoven. The scores of the five indicators are visualized in a pentagram model (a spider web). The professionals were asked to present the outcomes and motivate their choice and give suggestions for improvement.

Results of the participation measurement for professionals

All indicators were measured on a five point scale: 1=mainly professionals in charge; 5=views, objectives and needs of all different participants (inhabitants, professionals, commercial people, voluntary groups etc.) are represented.

Organization

The indicator *organization* was on the average assigned a 3 (see figure 7.3). Participants said that the project was set up by the Agricultural University and that the Municipal Public Health Services had taken over the coordinating and organizing task. Some thought the project was quite idealistic, without real obligations for the people involved but nevertheless they thought the project had succeeded in involving several local organizations and that linking the activities to existing activities in different local settings had been successful. The fact that the involvement of some organizations such as the home health service and primary schools in KB had not been possible was perceived as a limitation. It was felt that involving local inhabitants had been difficult because unhealthy eating is a behavioural problem and not many people seemed to be interested because of the long term consequences. As already pointed out in the community analysis, in AB it had been very difficult to get both professionals and volunteers involved in the steering group.

Needs assessment

The indicator *needs assessment* was on the average assigned a 2 (see figure 7.3). According to the people present, the baseline survey had not been a 'true' needs

assessment. The issue/problem had not been brought forward by the people themselves but was more a concern of professionals. It was proposed to use a more anthropological type of research: trying to observe and understand nutritional behaviour within family and social circumstances rather than looking at individual nutritional behaviour. Nevertheless, it was felt that needs assessment was a general professional problem: how do you combine professional concerns with the needs felt by people in the community?

Leadership

The indicator *leadership* was on the average assigned a 1 (see figure 7.3). Some participants thought that leadership belongs to the professionals because they felt voluntary groups needed that sort of support. A concern was expressed about 'recruiting' volunteers and to what extent you can ask volunteers to get involved. The general opinion was that goals and motives for involving volunteers must be clear and that local organizations need to have resources and possibilities to support volunteers who are motivated to become involved.

Human Resources

The indicator *human resources* was on the average assigned a 5 (see figure 7.3). It was generally felt that many activities had been possible because of the efforts of many people.

Financial Resources

On the average the indicator *financial resources* was assigned a 3 (see figure 7.3). Some participants had expected that there would be a clear budget of the Municipal Public Health Services available for the project since they were coordinating the overall project. The Municipal Public Health Services, however, had the intention to bear the financial costs together with other organizations involved. People agreed to this, but that this precedent should have been clarified from the beginning of the project.

Management

The indicator *management* was on the average assigned a 2 (see figure 7.3). For management the discussion was similar to the discussion about financial resources: who was bearing the ultimate responsibility and what could the professionals rely on?

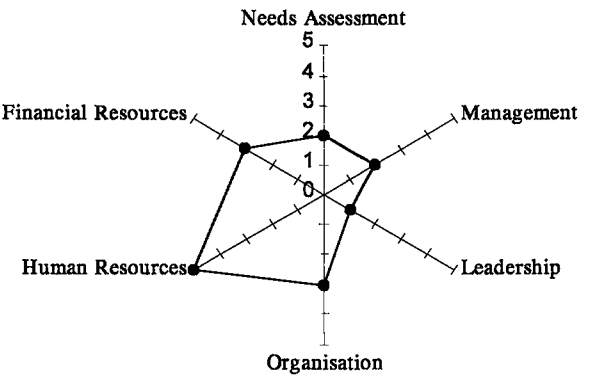

Figure 7.3 The spiderweb

The main questions which arose during the discussions of the professionals were very basic ones which returned to the beginning of the project: What are our objectives? Who do we want to involve and why? Another point put forward was that, although there are many organizations involved in the steering group of the project, no written commitments to participate in the project were obtained. The representatives of the organizations involved, felt that they needed more support from their superiors to justify the time and money spent on the project.

Furthermore, in general it became clear that the professionals concerned were satisfied with the working strategy of the project but they felt that more effort should be made to ensure active involvement of local inhabitants. Not everybody shared this opinion because a social worker questioned the reasons for community participation. He was afraid that professionals were motivating local inhabitants to collaborate so that professionals would not feel responsible any more. The group did not agree with this viewpoint, especially those from the community centre disagreed because they said that many activities would not be successful if the community had not been involved. As a prerequisite though, the group concluded that if people wish to become connected with the project, they should receive training and proper guidance.

It was also agreed that much more effort was required to encourage the participation of schools in the project. At the meeting it was also concluded that proposals and

activities needed to be tangible since it was much easier to secure volunteers involvement in the organization than if the plans were still insubstantial.

As a future strategy it was decided that the Municipal Health Service would write a policy-document, based on the discussion results of the measurement, clearly stating objectives and the roles of the different participants and the aim of this collaboration. This document has been produced and discussed with all the participants so that the final issue has been approved by everyone. The document has been offered to managers of the organizations involved and the politicians of Eindhoven. It has also been the basis for further planning.

7.4.4 Review of the try-out

Looking back at this phase of the programme it is clear that a wide range of activities have been organized within the SUPER-programme. The original idea of the programme was to start with supermarkets as the place of action. As a result of the inter-sectoral way of working many more settings were used for activities such as community and health centres, libraries, fairs and schools. Steering group members came up with many ideas and most of them have been tested. As a result, constraints and opportunities became visible and the project started to 'get going'.

Combining activities with 'fun' appeared to be a worthwhile concept especially to attract attention and to get rid of the negative image of healthy nutrition. However, it is important that source (health promoters) and aims of the activities (promoting a healthy diet) must stay clear. Enthusiastic volunteers play an important role to create this positive image as well. Because of their devotion to the success of the activities they function as models for others.

It was decided to evaluate the supermarket activities in detail. This did not mean that the course of other activities was not analysed. People who had carried out the activities were very well able to give a good description of the course of these activities and to indicate strengths and weaknesses which were discussed during steering group meetings. The evaluation of supermarket activities indicated that there are many advantages of nutrition promotion at point-of-purchase. Shoppers appreciated special attention to healthy food in the supermarket. As established in the results of the preliminary investigation basic knowledge is high and attitude is positive towards healthy eating. The intervention positively influenced the managers in the way they thought about the role they can play in health promotion and their responsibility in this field.

The participation measurement tool appeared to be a useful one to identify further action, input, requirements and responsibilities of the participants. Furthermore, it was a tool, *i.e.* agenda, for new strategies. It was interesting to see the activation of

discussion using this tool. Representatives reflected on their own activities, management and organization and had to interpret what they were doing and why. This implicitly meant that they had to clarify their goals and objectives and think about future strategies, one of the aims of this exercise.

As Engel & Salomon (1994) argue active participation has the prerequisite that relevant social actors must be willing to get involved. Therefore, goals and mission statements for the combined approach of the possible participants have to be identified and explored. Among the participants there should be a clear understanding of each others' motivations and ability to promote mutual benefits. Moreover, it is necessary to detect the 'participation'-space and participation 'experience'. Even though a person or organization has been identified as an essential partner, they must be able to carry out the responsibilities within the structure they work. For example, in Eindhoven, the dieticians of the home nursing service were not allowed to participate because they had to focus their attention on patients with specific dietary needs (*e.g.*, diabetes). In addition to this space for participation, people need to know what it means to work together and what they can expect. Sometimes volunteers will need some training and have to get acquainted with the decision making structures.

The participation measurement tool helped to clarify if the working strategies were in agreement with what the participants had in mind. It appeared to be important to also make the choice of the indicators and definitions of narrow and wide participation in a collaborative process. Some participants questioned why these indicators were the most important and if no additional indicators should be included. Furthermore, some participants experienced difficulties with the definitions and proposed alternatives. Clearly all these responses were helpful and showed that development and application of these types of technique require involvement from the beginning.

7.5 Section 3: Reflection

In November 1993 the baseline survey of 1991 was repeated (follow-up survey) with the aim to evaluate the impact of the project at individual level and to supply the steering groups with information to support decisions for continuation of the project. Members of the steering group felt that what had happened during this period should be extended because it had just been a first experience of what was possible. This was also a reason why the part previously described has been called the 'try-out'. To gather the data which were of interest for the steering group, the baseline questionnaire was extended with questions about activities which had been organized between September 1991 and September 1993 and with questions about possible improvements. Furthermore, it was felt that it was important to understand the meaning of the outcomes of the follow-up survey. The interpretation of the results of

the baseline survey had been difficult (see 'take-off'). Therefore it was decided to organize focus group discussions to discuss the findings of the individual interviews with groups of respondents of the follow-up survey. Besides explanations of the findings, these focus group discussions were also a form of 'participant checking' (Koelen & Vaandrager, 1994), to explore if what was found was in accordance with the expectation of people living in the project areas. The supermarket inventory was also repeated. It included an interview with the managers of both experimental and control supermarkets about possibilities for the future.

Design of the follow-up survey

Subjects

Out of the 436 respondents of the baseline survey, 296 were interviewed again during the follow-up survey. Because 55 respondents had moved out of the area or died, only 381 respondents could be approached. In KB 22 and in AB 21 could not be contacted (not at home) and in both areas 21 people refused to cooperate. This meant that non-response was low (11%). There were minor differences in the background variables between the group which was interviewed in 1991 and the group which was interviewed in 1993 and this was only the case for the respondents of KB. There were fewer respondents of KB with an income below 1,600 guilders/month (19% compared with 36% in 1991). As in 1991, most respondents were women (89%) and the percentage of women interviewed in AB (93%) was higher than in KB (84%). The average age was 42 (AB=41; KB=45).

Questionnaire design

The questionnaire of the baseline survey was adapted since some questions could be left out and some additional questions had to be included. Questions about shopping behaviour (see try-out) were left out because they were included in the baseline survey for reasons of planning the intervention. Also some items of the food frequency list were left out because their consumption was very low. Some additional questions about the organized activities were included. Respondents were asked if they had noticed any activity, what they thought of these activities and where possible improvements could be made.

Procedure

Seven interviewers were trained on how to carry out the interviews and this procedure was similar to the one for the baseline survey (see try-out).

Analysis

During the evaluation of supermarket activities, many shoppers of the control supermarkets had visited the experimental supermarkets (see 'try-out'). This was also the case for the respondents of the follow-up survey. Furthermore, besides activities in supermarkets, many other activities had been organized in other settings (see 'try-out'). Instead of comparing experimental and control groups, it was therefore decided to make a comparison between respondents who had noticed or participated in activities (awareness-group) and respondents who had not (non-awareness group). Mean scores for intake, beliefs and knowledge were calculated for 1991 and 1993, AB and KB, for experimental, control, age-, income- and education group separately. Data are mainly presented in a descriptive way (frequencies and cross tabulations). The X^2 and t-test were performed to test differences. For beliefs, differences were studied by conducting a multivariate analysis for sex, age, area, education and income. For all analyses a p-value of <0.05 was considered as being statistically significant.

Results of the follow-up survey

Awareness of activities

A total of 203 respondents (69%) said to have noticed one or more activities. Activities in the supermarket and media activities were especially known by many people (see table 7.23). The awareness group and non-awareness group did not differ in age, sex, area, education and income.

TABLE 7.23

Percentage of respondents who have noticed activities (N=296)

Activity	%	(n)
Supermarket activities	31	(93)
Media activities	30	(89)
Newsletter	24	(71)
Saint Nicholas/Father Christmas in supermarket	10	(29)
Exhibition in library	09	(27)
Stand on Community Fair	08	(25)
Contest 'No garbage in my lunch box'[1]	07	(22)
Coffee mornings for Turkish women[2]	07	(20)
Cooking course children in community centre[2]	07	(20)
Elderly meeting/Bingo	07	(20)
Exhibition health centre[1]	02	(05)

[1]only in AB
[2]only in KB

Most respondents who had noticed the activities in supermarkets mentioned to have noticed the 'Fat Watch' campaign material and the product information leaflets (see table 7.24).

TABLE 7.24

Percentage of respondents who have noticed supermarket activities (N=93)

Activity	%	(n)
Fat Watch poster	60	(56)
Fat watch leaflet	57	(53)
Product information leaflet	43	(40)
Cooking demonstration[1]	30	(28)
Shelf labels	28	(26)
Fatmeter	27	(25)
Recipe on receipt[1]	15	(14)
Supplementary sheet in supermarket magazine[2]	11	(10)
Competition	10	(09)

[1]only in AB
[2]only in KB

Forty-one percent of the awareness group said that the activities had not influenced their thinking or behaviour whereas 28% of the respondents said they did (*e.g.*, started to eat low-fat products). There was also a group who said these activities were useful for others but not for themselves (3%). Half of the 93 respondents who had noticed the supermarket activities said the activities had affected their behaviour. This group said the activities were instructive, interesting and clear. The remaining respondents said the activities had not been influential on their behaviour.

Respondents who had not noticed the activities were asked why they thought they had not noticed them. Most respondents (48%) said not to have been at the places where the activities had been organized (*e.g.*, experimental supermarkets or community centres) or did not belong to the target group (children, elderly). There was also a group (31%) who responded not to be interested in these types of activities and a group (9%) who responded not to have enough time.

Food consumption in 1991 and 1993

In general, only minor differences in food consumption were found between 1991 and 1993. Consumption of visible fat (frying fat, oils and spreads) did not change significantly. Although the use of spreads on breads (margarine, butter) was slightly decreased this was not significant. Consumption of 12 products changed significantly between 1991 and 1993 (see table 7.24). The consumption of single food items is not appropriate when one wants to judge the quality of diet. It is the overall diet which is

important for this. However, the overall calculation of the quality of diet is not possible because the data are not detailed enough. Nevertheless, some favourable trends could be noticed such as the increase of consumption of uncooked vegetables, fish, pulses and semi-skimmed milk and the decrease of consumption of soft drinks and biscuits. The increase of the consumption of chips and fried potatoes was a less favourable trend.

A comparison of the average food consumption was made between the awareness group and the non-awareness group (see table 7.24). In 1993, the awareness groups had a higher consumption of cheese and a lower consumption of alcohol than the non-awareness group. A higher consumption of cheese was also found in 1991. Although consumption of pulses and semi-skimmed milk was significantly higher in the awareness group in 1991, this was not the case in 1993. These results indicate that consumption patterns of the two groups do not differ much from each other.

At the same time changes between 1991 and 1993 were studied in both awareness and non-awareness groups (see table 7.25). The same trends occurred as in the group as a whole.

The changes for peanut butter, semi skimmed milk, skimmed yoghurt, chips & fried potatoes, biscuits and pasta were significant in the awareness group and changes in semi skimmed milk, pulses and raw vegetables were significant in the non-awareness group. Again, it was difficult to make judgements about these changes.

Nutrition beliefs in 1991 and 1993

As explained in the 'take-off', beliefs were measured on a five point scale. The scale was recoded from -2 to +2 to be able to make judgements about the direction of change. A positive belief towards healthy nutrition corresponded with a positive score, a negative belief corresponded with a negative score. In 1993 the average score for the beliefs 'Cooking is a waste of time' but also 'In general I feel healthy' and 'People are able to influence their health' were significantly lower than in 1991 (see table 7.26). The changes for the statements 'Cooking is a waste of time' and 'People are able to influence their health' were attributable to the awareness group, whereas the change in score for the statement 'In general I feel healthy' was significant in the non-awareness group. Although these changes were in the negative direction, average scores were still high indicating a positive attitude towards healthy eating.

TABLE 7.25

Average consumption of food items/week of which the amount consumed changed significantly between 1991 and 1993

Food item	Unit	Total group 1991 1993 (N=296)	(+) 1991 1993 (N=203)	(-) 1991 1993 (N=92)
peanut butter	a slice	1.4 1.0*	1.6 1.0*	1.2 1.0
semi skimmed milk	a glass	2.4 5.4*	#2.6 5.6*	#1.9 4.9*
full fat yoghurt	a bowl	1.2 0.9*	1.3 1.0	1.1 0.8
skimmed yoghurt	a bowl	2.9 2.4*	3.0 2.5*	2.6 2.2
chips & fried potatoes	serving spoon	2.3 2.9*	2.2 2.9*	2.5 2.8
pulses	serving spoon	1.0 1.4*	#1.1 1.3	#0.7 1.4*
tinned vegetables	serving spoon	2.4 2.0*	2.4 2.0	2.4 2.0
uncooked vegetables	serving spoon	4.3 5.0*	4.5 5.0	3.8 5.1*
fresh/frozen fish	100 gr	0.7 0.8*	0.7 0.9	0.6 0.8
soft drinks	a glass	2.9 2.3*	2.9 2.3	3.0 2.4
biscuits	a piece	2.1 1.3*	2.3 1.5*	1.7 1.0
alcohol	a glass	4.6 4.3	4.1 3.6#	5.7 5.7#
cheese	a slice	1.4 1.3	#1.7 1.5#	#0.8 0.9#
pasta	serving spoon	2.6 2.6	2.6 2.0*	2.6 2.3

(+) respondents noticed activities / (-) respondents did not notice activities
* significant difference between 1991 and 1993, paired t-test, $p<0.05$
# significant difference between awareness group and non-awareness group, t-test, $p<0.05$

Nutrition knowledge in 1991 and 1993

In 1991 the majority of respondents corresponded correctly to most statements with exception of those about margarine and butter. Therefore, impressive changes could not be expected. However, analysis showed a few improvements especially on those items of which scores were low in 1991. The statement 'Margarine contains less fat than butter' was answered correctly by more respondents in 1993 than in 1991 (1991: 14%; 1993: 21%). The statement 'Three large meals is better for digestion than five small ones' was answered correctly by more respondents in 1993 than in 1991 (1991: 66%; 1993: 76%). This increase was also significant in the awareness groups. Furthermore, a larger percentage of this group knew that a diet containing too much fat can cause heart disease (1991: 95%; 1993:99%) and that the amount of

calories in cheese is high (1991: 80%; 1993:87%). In the non-awareness groups, the number of respondents who knew that the statement 'diet margarine contains less fat than margarine' increased from 10% to 20% (see table 7.27).

TABLE 7.26

Average belief scores which changed significantly between 1991 and 1993

	Total group (N=296)		(+) (N=203)		(-) (N=92)	
Belief	1991	1993	1991	1993	1991	1993
Cooking is a waste of time[1]	1.68	1.48*	1.73	1.45*	1.57	1.56
In general I feel healthy[1]	1.57	1.41*	1.52	1.42	1.66	1.40*
Able to influence their health[1]	1.81	1.67*	1.80	1.65*	1.84	1.73

(+) respondents noticed activities / (-) respondents did not notice activities
* significant difference between 1991 and 1993, paired t-test, $p<0.05$
[1] A positive belief towards healthy nutrition corresponds with a positive score (-2, +2)

TABLE 7.27

Significant change of percentage of respondents who answered knowledge statements correctly in 1991 and 1993

	Total group (N=296)		(+) (N=203)		(-) (N=92)	
Statement	1991 %	1993 %	1991 %	1993 %	1991 %	1993 %
Margarine contains less fat than butter	14	21 *	17	24	7	13
Three large meals is better for digestion than five small meals	66	76 *	67	78	62	70
Diet margarine contains less fat than margarine	15	22	18	23	10	20 *
A diet containing too much fat can cause heart disease	94	97	95	99 *	91	93

(+) respondents noticed activities / (-) respondents did not notice activities
* significantly different, X^2-test, $p<0.05$

Differences between KB and AB

In AB consumption of full fat and skimmed yogurt, tinned vegetables, biscuits and snacks decreased. Consumption of skimmed milk, chips and fried potatoes, pulses, mayonnaise and chicken increased (see Annex II). For KB the consumption of biscuits decreased and the consumption of skimmed milk and fresh and frozen vegetables increased between 1991 and 1993 (see Annex II). Keeping in mind that the overall diet counts, the trends in AB are positive (*e.g.*, increase of consumption of skimmed milk and pulses), as well as negative (*e.g.*, increase of consumption of chips and mayonnaise) whereas the trends in KB are all positive.

The average score on the statement 'I am able to influence my health' decreased in both areas ($AB\text{-}belief_{1991}=1.83$; $AB\text{-}belief_{1993}=1.68$; $KB\text{-}belief_{1991}=1.63$; $KB\text{-}belief_{1993}=1.36$). The average score on the statement 'cooking is a waste of time' ($AB\text{-}belief_{1991}=1.65$; $AB\text{-}belief_{1993}=1.45$) only decreased significantly for respondents of AB. The average scores on the statements 'I have a healthy diet' ($KB\text{-}belief_{1991}=1.15$; $KB\text{-}belief_{1993}=0.99$) and 'In general I feel healthy' ($KB\text{-}belief_{1991}=1.62$; $KB\text{-}belief_{1993}=1.36$) only decreased significantly for respondents of KB.

The statement 'Margarine contains less fat than butter' was answered correctly by 23% in AB and 17% in KB. The statement 'Diet margarine contains less fat than margarine' was answered correctly by 25% of the respondents in AB and 16% of the respondents in KB. A larger number of respondents of KB knew that bacon was high in calories (1991: 86%; 1993: 95%). In 1993 more respondents of KB (73%) responded correctly to the statement that 'Three large meals is better for digestion than five small ones' than in 1991 (56%).

Main effects for the 'health'-beliefs and 'Healthy food/Cooking'-beliefs

Both in 1991 and 1993 main effects on 'Health-beliefs' were found for age and education (see try-out). Older respondents and lower educated believed that they had a healthy diet and that good health depends on good luck than younger respondents and higher educated ones. Older respondents were also less convinced that they could influence their own health than younger respondents. Higher educated respondents were more accepting about the fact that what one eats influences health. In 1993 an additional effect for sex was found. In 1993 women seemed to be more convinced they had a healthy diet than men (men=0.40 and women=0.91; $F(1,292)=5.81$; $p=0.017$). The effect for area was not found.

Both in 1991 and 1993 main effects on 'Healthy food/cooking'-beliefs were found for area and income (see try-out). Respondents of KB were more convinced that they would eat healthier if healthy food was cheaper, and that healthy food was not sufficiently available than respondents of AB. The lower the income, the more respondents thought they could not afford a healthy diet and the more they were

convinced that healthy food was not available. In 1993 an additional effect for education was found, and this seemed to be a result of the fact that cost of healthy food for lower educated is more a hindrance than for higher educated. The effect of age was not found.

Recommended improvements

The respondents were asked what could have been done better. A general recommendation was better announcement of activities through community newspapers, local television, radio and so on and more eye-catching activities. To involve more shops and organizations was mentioned as a possible improvement. It was felt that it was important to specially pay attention to nutrition education for children.

Respondents were asked what type of nutrition promotion activities they preferred (see table 7.28). Most of all recipes and articles in newspapers were mentioned. Respondents of the awareness group more often suggested leaflets, advice from a dietician/nutritionist and a cooking course as preferred nutrition promotion activities than respondents of the non-awareness group. In the latter group more respondents replied that there was no need for nutrition promotion activities.

TABLE 7.28

Preferred nutrition promotion activities

	Total group (N=296) %	(+) (N=203) %	(-) (N=93) %
recipes	63	66	56
articles in newspapers/magazines	54	57	50
leaflets	53	57*	43*
television/radio programmes	53	54	51
labelling	48	51	42
advice of a dietician/nutritionist	41	46*	28*
shelf labels	35	38	27
advice of a doctor/dentist	30	32	25
cooking course	26	32*	14*
via supermarket staff	11	13	07
other	06	07	02
no need for nutrition promotion activities	23	19*	30*

(+) respondents noticed activities / (-) respondents did not notice activities
*X^2-test, $p<0.05$

Conclusions of the follow-up survey

Overall, it appeared that changes in behaviour, knowledge and beliefs were minor between 1991 and 1993. Furthermore, there were only a few differences between the awareness and non-awareness group. In a previous section it was explained that it is difficult to make statements about the meaning of food consumption changes since in the end the overall diet counts. Nevertheless, in both awareness and non-awareness groups consumption of a number of food items changed positively. Nutrition knowledge increased, especially for the statements about fat. Although scores on beliefs were still convincingly positive, they had changed in the negative direction. A possible explanation is that respondents have become more conscious about their diet and therefore less positive about their own health and ability to influence health. However, to find higher scores for beliefs in 1993 was practically impossible because in 1991 average scores were already close to the maximum (ceiling effect).

Focus group discussion

It was decided to discuss the results of the follow-up survey in five different focus group discussions which were: respondents of the follow-up survey (three groups), a group of schoolchildren and a group of elderly who were willing to participate. The aim of these focus group discussions was to feedback the results to verify if they were correct and to suggest improvements.

Subjects

A total of five group discussions were held. One involved children of the cooking course in the community centre of KB, another elderly who were recruited through the elderly association and three groups involved respondents of the follow-up survey who had indicated that they were willing to participate. It was notable that a large number of respondents (30%) had volunteered. The average group size was 5-6 respondents. The aim of the focus group discussions was to discuss the background of the findings of the follow up questionnaire and possible improvements.

Procedure

During the focus group discussions the outcomes of the follow-up survey were discussed. Furthermore, the respondents expressed their views on reasons for unhealthy eating and were asked to give recommendations. The duration of the sessions were 1,5 hour and they were carried out by two researchers: one chair and one person making notes. All sessions were tape-recorded.

Analysis

All focus group discussions were then typed out. They were summarized in two ways. The first way was per topic also called the cut-and-paste technique (Stewart &

Shamdasani, 1990). The topics were: strategies for promotion of healthy eating (education, packing & labelling, media, legislation, price, availability), existing campaigns and effectivity of these campaigns, behaviour change (convenience, time, laborious, price, availability, long-term effect, taste, culture, social pressure), judgement of the activities (positive, negative) and special recommendations (diffusion, product information, organizations, schools and children, festivities, media, recipes) for the project in Eindhoven. The topics between brackets were chosen as categories after a first analysis. This resulted in summaries of responses to the different topics. Hereafter each focus group discussion was analysed on the categories to summarize each session separately.

Results of the focus group discussions

Participants of the focus group discussions were not surprised about the results of the follow-up questionnaire. It was discussed why it was so difficult to change nutritional behaviour in a positive direction. It was remarkable that many contradictions were revealed and that participants clearly understood that nutritional behaviour depends on various individual, social and environmental factors. Aspects which were mentioned were lack of time to prepare a proper meal; price of healthy food; the nice taste of fast-food (which infers that fast-food is perceived as unhealthy); lack of skills; customs; influence of family members; lack of social support; not feeling a member of the group 'unhealthy' eaters; and the fact that short-term effects (satisfy one's hunger) are more important than long-term effects (effects on health). On the other hand some of these factors were also denied. For example, fast-food is more expensive suggesting that money does not have to be a barrier to healthy eating, and that healthy food can be tasteful, and that preparing healthy food does not have to be difficult and can be made quickly. What also became clear from the focus group discussions is the fact that many people still perceive healthy food as special or different, that eating food out of tins is a sin, and that healthy food is 'green' and 'alternative'. The respondents were asked to give solutions for improving people's diet. Some people proposed legislation such as removing 'unhealthy' food out of the shop, lowering the prices of healthy options, or increasing the prices of 'unhealthy' options. Others preferred special signs in the shops indicating 'healthy' food, tastings and distributing 'healthy' recipes on a more regular basis. Others were of the opinion that it was important to start with children to break the tradition. It was however, felt to be equally important to initiate the discussion and awareness about the importance of healthy eating amongst parents and people in general. Finally, respondents recommended that there should be more publicity about such activities in newspapers, on the local radio and local television. It was also felt necessary to make a clear distinction between commercial and healthy eating activities. They thought that many people are not interested in commercial activities in supermarkets whereas they appreciate nutrition promotion activities. The respondents thought it was important to continue with the activities, but stressed,

that these activities should not only be organized in supermarkets but also in other settings.

Repeat of the inventory in supermarkets

The inventory in supermarkets was repeated in January 1994. The availability of food items did not change. As in 1992 all food items were sufficiently available except in SUP-KB2 where the range in fruit and vegetables was small. The price of a 'healthy' basket was still 22% higher than a 'less healthy' basket (in 1992: 24%). On the average prices had increased for all food items between 1992 and 1994. Labelling had not changed between 1992 and 1994 and claims were still found only on 'healthy' food items. Promoting the sale of 'healthy' food items through special placement, price reduction or additional information was still not structurally done. Although only minor differences were found, the attitude of managers to organize activities was very positive. In 1992 most managers were suspicious about organizing nutrition promotion activities in supermarkets, whereas in 1994 they were more optimistic about the possibilities. Customers had responded positively and they thought practical activities were particularly good such as tasting healthy food or a guided supermarket tour. They were convinced that these type of activities are successful on the short-term, whereas they had their doubts about the long-term effects. They argued that they needed more support from their head offices to be able to make structural changes.

7.5.1 Review of reflection

The important question is now: what was it all worth? Was this project a success and can others learn from this experience?

The experience with the project in Eindhoven identified that in principle it is possible to stimulate and facilitate the process of health promotion in the field of nutrition. In AB and KB it appeared possible to set up a communication structure between different partners. Members of the steering groups acted as mediators for target groups and other networks. They managed to organize a wide range of nutrition promotion activities in different settings and for different groups. There is now much more attention for nutrition issues and there are many more activities being organized in these areas compared to when the project started. In other words, it is possible to make changes in the social and physical environment which support healthy food choices of individuals. In addition, the project functioned as an example for other areas where the project has also been initiated. Furthermore, the local co-ordinator nowadays gets more requests from citizens through steering group members for promotional material or to help organizing activities in the field of nutrition. In this respect the 'fatmeter' and the 'info bus' are very popular. The 'info bus' is a mobile information centre so that people can visit the bus close to where

they live to ask questions or receive information. The fatmeter has been bought by the Municipal Public Health Services because of positive experiences with the instrument in the supermarkets of AB and KB. A team of local dieticians has been trained to work with the 'fatmeter' and last year they have been very busy, because of the large number of requests. The steering group of KB has decided to continue, several activities have been repeated and new activities have been initiated. Great changes on individual level have not yet occurred but this could be expected since it is known that nutritional behaviour does not change overnight. Furthermore, detailed evaluation of specific activities (*e.g.*, supermarket activities) pointed out that they positively influenced attitudes. This means that the project can be viewed as a success in creating a sustainable basis for continuation and this is enough reason to believe that in the end individual behaviour will also change in the positive direction.

The process of building networks, learning to collaborate and visualizing the advantages of intersectoral collaboration had been much more time-consuming than foreseen. A number of difficulties were experienced and many initial choices had to be adapted. The shift towards more process-oriented research methodologies made it possible to highlight difficulties. The difficulties functioned as valuable learning experiences and thus became opportunities. In chapter 8 this point is further elaborated on since experiences appeared to be similar in the other cities.

Involving volunteers throughout the project was rather difficult and steering group members were also concerned about troubling volunteers too much. When volunteers planned and executed one concrete activity for which each individual role was clear then they were most successful. It was much more difficult for them to come to the general steering group meetings and discuss the project as a whole. Another type of involvement very much appreciated was that people were consulted about the activities in individual interviews as well as in group discussions.

Except for learning experiences with the health promotion approach in practice, the project was also useful for the development of research methodology. The learning experiences were related to:

- the nature of the project: working with health promotion principles meant that the course of the programme could not be planned in detail and it was impossible to control all interfering variables;
- collaborating with different participants meant working with different ideas and objectives; and
- working together meant a greater chance of diffusion of the intervention.

These three factors made it difficult to work with the design of control and experimental supermarkets mainly because of several threats of the internal validity (see chapter 6). 'History' played a part because between the baseline survey (1991) and the follow-up survey (1993), several activities were organized besides activities

in supermarkets such as cooking courses for children, competitions in schools, gatherings for the elderly, coffee mornings for Turkish women: all activities were a result of intersectoral collaboration. The activities in both areas were not identical because they depended on local possibilities. Any observed effect could be due to these other 'interfering' factors. There was a testing-effect of the instrument as well: when the supermarket activities were evaluated it appeared that respondents who were interviewed twice were more interested and more positive about the activities than respondents who were interviewed for the first time. The kinds of people of experimental and control groups were different: each of the four supermarkets were of a different chain. The question quickly raised was if the experimental and control groups were comparable since different chains attract different clients (selection). The fact that not all baseline survey respondents agreed to participate in the follow-up survey might suggest that follow-up participants were more health conscious than those who declined to participate in a second survey and it appeared that many people of the control supermarket also visited the experimental supermarkets (diffusion). Furthermore, supermarket managers of the control supermarkets in both project areas also wanted to organize activities (compulsory rivalry).

From a scientific perspective these threats were a problem, but from a practical and health promotion perspective it was the best thing that could happen: involvement, increase of awareness, several locally initiated activities, collaboration and diffusion.

During the course of the project when all these difficulties arose it was questioned whether the quasi-experimental design was suitable for community based health promotion. An important condition for the quasi-experimental design is that programmes are homogeneous, that experimental and control groups are clearly separated and that interfering variables can be controlled. Community programmes cannot meet this condition since practice does not allow it. The principle of health promotion is that activities are being started off and carried out by the community. The number of interfering variables is large and difficult to control. Large samples and measurements at different moments are needed to be carried out with great care and statistical analyses are difficult. Altogether the issue for community programmes is not so much the ability of the intervention to affect behaviour but the ability to measure behaviour change (Mittelmark *et al.*, 1993). Researchers involved with the project started to look for research methodologies more suitable for this type of programmes in which health promotion is seen as a social and cultural phenomenon. If research does not fit the philosophy, there is a risk that results are useless and difficult to interpret. Furthermore, researchers can assist in programme development by delivering data throughout the process. Overall the experiences resulted in a shift of thinking: research was to be used much more as an action instrument.

With regard to the measurement of nutritional behaviour it was too expensive and time-consuming to carry out a detailed food consumption study but the alternative of using a food frequency list was not satisfying either since changes in the

consumption of single food items have little meaning. Furthermore, a problem with assessing dietary behaviour through self-report is that eating is a mundane, frequently repeated form of behaviour done with relatively little attention (Koepsell *et al.*, 1992). Worsely *et al.* (1984) has stressed that reports of dietary behaviour depend on whether food items are perceived as socially desirable or personally relevant. Comparisons with daily food records have indicated overestimates of up to 50% on food frequency judgements for 'healthy' food items and underestimates of up to 30% for 'unhealthy' food items (Salvini *et al.*, 1989). Koepsell *et al.* (1992) advise to try and assess and minimize these biases *e.g.*, by including social desirability and food salience scales in the questionnaires. Other techniques, such as focus group discussions or sales figures might be alternatives although both have disadvantages as well. Again a combination of methodologies seems to be most appropriate (triangulation).

Discussing the results of the outcomes of the follow-up survey with smaller groups has only been done for the follow-up survey. The assumption that this would provide better insights and understanding was confirmed. Furthermore, many respondents were interested to participate in these group sessions. After the discussions had taken place many of them remarked that these discussion groups had also been a learning experience for them.

Overall, the project was and still is a valuable learning experience for putting the health promotion principles in practice. The Municipal Public Health Services have appointed an employee who has nutrition promotion and coordinating work in the field of nutrition as one of her tasks, nutrition promotion is now on the agenda of many local organizations, the project has expanded to other areas and the steering group is still working on the development of a nutrition policy on city level. All these factors are evidence for the sustainability of the approach. In the next chapter the course and the outcomes of the project in Eindhoven are compared to the experiences in the other cities.

8 Liverpool, Valencia, Rennes and Horsens

8.1 Introduction

In this chapter the development, course, outcomes and learning experiences of the SUPER project in Liverpool (U.K.), Valencia (Spain), Rennes (France) and Horsens (Denmark) are described. In chapter 7 it was explained that it is impossible to describe each of these projects as detailed as it has been done for the one in Eindhoven. Therefore, only the similarities and differences related to common themes will be discussed. The experiences in the five cities resulted in improved understanding of health promotion in practice and related research methodologies. The projects are described in four phases related to the development in the course of time comparable to the order in which the project in Eindhoven has been described (chapter 7). For each of these phases the following themes are discussed:

1. Initiation: initiators and rationale for the project;
2. Take-off: needs assessment, situation analysis, building networks and community participation;
3. Try-out: strategy and process evaluation; and
4. Reflection: individual outcome evaluation and policy development.

8.2 Initiation and rationale for the project

The SUPER project originally started in Liverpool. The reasons for other cities to join the European network were interest in a new approach for nutrition promotion and ongoing work in the field of nutrition.

Liverpool
The original idea to start with the SUPER project dates back to 1989 when a nutrition survey was carried out by the Department of Public Health of the Liverpool University in seven areas (electoral wards) of Liverpool. It was a replication of a survey which had been carried out in 1984 (Brackpool *et al.*, 1984; Ashton, 1987). The 1989-survey also included an inventory in supermarkets (Vaandrager, 1989). One of seven poorer areas, Croxteth, was chosen as a an area for piloting community-based nutrition promotion activities. This area was also selected because it was a Health Action Area within the framework of the Healthy Cities project (Green, 1992). Based on the evaluation of the project in Croxteth a similar project was set up for the area West-Everton. Action supporting research guided the activities in both areas.

Valencia
Based on the experiences of research carried out in the seven areas of Liverpool, the Valencian Institute of Public Health (IVESP) decided to start a similar project in the areas Campanar and Ciudad Fallera in 1990 (Vaandrager *et al.*, 1992a). In 1993, a new strategy was considered due to the few results of the project in these areas. Project workers were of the opinion that if more attention would be paid to research supporting collaboration, the likelihood of successful outcomes would increase. Furthermore, it was clear that the food sector in the city was also influenced by organizations within the Valencian Region. Therefore, instead of focusing on small areas, it was decided, as a new strategy, to build up a nutrition network in the Valencian Region and pilot a new approach in the city Lliria.

Rennes
Experiences in Valencia and Liverpool motivated the Rennes Town Council to launch the SUPER project in 1991. Unfortunately, project workers were not able to find a research institute to carry out action supporting research. Preliminary research in the project areas Maurepas and Colombier was therefore carried out by two Dutch students of the Wageningen Agricultural University. A supermarket campaign was set up based on the results of this investigation. In 1994, a similar project was set up for the area Villejean and besides activities in supermarkets, activities were also organized in various other settings such as schools and community centres.

Horsens
In cooperation with the Heart Association of the county Vejle, the local society of businessmen, the Environment and Food Centre, and the Consumers Group, the Horsens Healthy Cities Foundation participated in a regional fat labelling campaign in nineteen different stores in the city during the autumn of 1990 and spring of 1991. Since The Healthy Cities Foundation was already working with nutrition, project workers were interested to join the SUPER project. As in Rennes, the project was initially not supported by a research institute. Preliminary research was carried out by a Dutch and a Danish student. Horsens is relatively small (in number of inhabitants as well as in size) compared to for example Liverpool. The city therefore does not have clearly separate neighbourhoods. After a first attempt in the two project areas, the project workers approached the city as a whole rather than as two specific areas.

Review of initiation

An important characteristic of all the projects was that the initiative for a project concerning nutrition was not based on a concern put forward by the community. It was a concern of professionals who were worried about the prevalence of nutrition related diseases. They wanted to work according to the health promotion principles because they were unhappy with the results which could be achieved by means of health education. Additionally, they believed that working together within an

international network had many advantages. The projects in Eindhoven, Valencia and Liverpool were investigator-initiated with a greater emphasis on research, whereas, the projects in Rennes and Horsens were practioneers-initiated with more emphasis on practice. As a result, projects in cities emphasizing research often experienced practical problems (*e.g.*, how do we involve community members?) while projects emphasizing practice, started to miss scientific data to uphold credibility of the programme, and support programme development and continuation. In the course of time, projects in Eindhoven, Valencia and Liverpool became much more 'practical' whereas projects in Horsens en Rennes started to link up with local universities. It can be concluded that for health promotion projects a right balance must be found between research and practice and that both are necessary for successful outcomes.

8.3 Take-off

8.3.1 Needs assessment

A combination of methodologies has been used for needs assessment including reviews of existing epidemiological data, local surveys and rapid appraisals (see chapter 6). Methodologies used for needs assessment were adapted to the local situation. They were adjusted to available budgets and time which could be spent on needs assessment, differences in eating habits and customs, and pre-existing information about the project areas. For example, food items included in the baseline surveys and supermarket inventory differed among the countries. For needs assessment, flexibility was required and a right balance between a practical and scientific way of working had to be found.

Epidemiological data

In chapter 2 it has been described that nutrition related diseases are a concern for each country. However, for some cities epidemiological data are more convincing than in others.

Liverpool
Liverpool has one of the worst records for heart disease in England. In 1991, heart disease accounted for 26% of all deaths in Liverpool. The pattern across the city is not even; some electoral wards have twice the levels of heart disease than others. Liverpool is also among those cities having the poorest dental health (Liverpool Healthy City 2000 Project, 1993). Death rates for nutrition related diseases in Croxteth and West Everton were higher compared with average figures of Liverpool and the United Kingdom (Liverpool Health Authority, 1991).

Valencia
In the Valencian Region, coronary heart disease is the major cause of mortality, followed by respiratory diseases, cancer and diabetes (Benavides *et al.*, 1989).

Rennes
Compared with other European countries, France has a lower incidence of cardiovascular disease. Since France has relatively high intakes of fat and in particular of saturated fatty acids and cholesterol, this is a strange phenomenon (see chapter 2).

Horsens
Denmark is following the international trend of a decreasing incidence of overall heart disease, although, compared to other European countries, Denmark is lagging behind in this respect. Cardiovascular diseases still stands for 44% of the causes of death in Denmark (see chapter 2).

Local surveys

Baseline surveys and inventories in local supermarkets were carried out in all five cities (see chapter 6). These measuring-instruments were similar to one another, but were also adjusted to each local situation. It was found that products low in fat or high in fibre were generally not available in the deprived areas on the scale as they were available in the more affluent areas. Furthermore, the price of a basket filled with 'healthy' food items was, in general, ±20% more expensive than a basket filled with 'less healthy' food items. At the same time, it was found that people living in disadvantaged areas consumed both less healthy, cheaper types of meat as well as less vegetables, and perceived the price of healthy food as a barrier. Although inequalities in the field of nutrition were more clear in some cities (Liverpool, Valencia) than others (Horsens, Eindhoven), there was a strong indication that social and environmental factors influence dietary behaviour and that there was a need to take action in the field of nutrition (Adolfse, 1992; Bergh & Koek, 1992; Vaandrager *et al.*, 1992a; Illing, 1992; Röling & Smit, 1993). In the United States, Cheadle *et al.* (1991) also looked at the relationship between individual dietary behaviour and the supermarket environment in twelve communities. They also found a positive correlation between the availability of 'healthy' (low-fat and high-fibre) products in supermarkets and the reported healthfulness of individual diets.

New indicators for food consumption

Since food consumption studies are expensive and time-consuming, Valencia considered new indicators for food consumption (see chapter 6). Sales figures of ten

food items of one supermarket chain were compared in different socio-economic areas of Valencia. Food items were considered as 'healthier' (fruit, vegetables, skimmed milk, fresh fish and chicken), 'less healthy' (pork, butter and cakes) and indicative of 'a new style of eating' (pre-cooked and frozen products). The ratio of sales between 'healthier' and 'less healthy' food items was calculated for the years 1989 and 1990. The findings of this survey were in line with the findings of the baseline survey: in lower socio-economic areas, the sales figures of 'less healthy' food items were higher than in the higher socio-economic areas (Gutiérrez *et al.*, 1994).

Key informants

Interviews with key informants about the area, health and social conditions, activities, networks and nutritional habits were carried out to assess what these key informants perceived as needs of community members (see chapter 6). Key informants who knew the area well, provided information which was useful for understanding findings of the baseline surveys and also for identifying opportunities for health promotion activities.

Liverpool
Key informants of West-Everton expressed a concern about the diet of inhabitants of West-Everton, especially of children. Headmasters and cooks of the local schools reported that children rarely eat vegetables. The results of the baseline survey confirmed these concerns. During the interviews, possible solutions for the problems were discussed, and in this particular case, it meant that schools were very willing to include nutrition education in their programmes.

Horsens
The manager of the hypermarket explained during the interview that he wanted his supermarket to be a consumer friendly organization and commercial goals were not only important. He explained that the supermarket had the policy to provide information about healthy food and environmental issues, to plan activities to make these choices more accessible and to urge food producers to provide them with healthy and environmental friendly food products.

Review of needs assessment

Overall, needs assessment worked as a mandate to effect change and to make money and manpower available for activities through local organizations such as the supermarkets and the municipality. Local data appeared to be important since it was more stimulating for action than national and international statistics. However, it was not easy to find the balance between practical needs and scientific rigour. Unstructured interviews with key informants have the danger of being criticised as 'too soft', environmental characteristics are difficult to measure, but structured surveys are time-consuming and give little explanation. Therefore, it is important to find quick, simple and cheap research methodologies and to analyse the situation from different viewpoint, also referred to as triangulation. Triangulation is a cross-check of information, using multiple sources, multiple methods and multiple

investigators. The term multiple sources refers to the multiple copies of one source (*e.g.*, interviews with different members of one group), or to the use of different sources regarding one topic (*e.g.*, interviews with supermarket managers, mothers, school teachers and health workers about eating habits of children). The term multiple methods refers to the comparison of results derived from a range of methods, for example, comparing results of an inventory in supermarkets with results of interviews or group discussions. Once a proposition has been confirmed by one or more methods, the uncertainty of its interpretation is greatly reduced. The idea of multiple investigators is especially strong in participatory research. The ones involved in planning and activities are also involved in the inquiries. The participants have a variety of professions, backgrounds and standards, which increases the range of perspectives and biases. When participants agree on interpretation of results, the threat of biased interpretations is strongly reduced (Vaandrager & Koelen, 1994).

8.3.2 Situation analysis

Before planning or undertaking new nutrition promotion initiatives, it is important to have an overview of existing health promotion efforts in the community since a starting point of health promotion is to link new activities to the pre-existing situation. Besides health promotion efforts, other activities such as special community events can be of interest. If the new activities can be successfully linked to already existing activities, the possibility of continuation is more significant. Therefore, it is important to first analyse these possibilities. The main task is to mobilize and organize the existing resources and activities using local opportunities. A situation analysis can highlight existing examples of good practice, available organizational resources, potential for change and opportunities for action. A local situation can be analysed by consulting key informants or by using an assessment instrument.

Eindhoven
The neighbourhood centre in KB which was already used to organize cooking courses for children and 'healthy recipes' were included in the programme. Another example of making use of the existing situation was to was link up with the yearly street fair in both project areas of Eindhoven as steering group members had indicated that this was a popular community event.

Liverpool
An integral part of Liverpool's Community Education Policy is the involvement of parents in their children's education. The Parent School Partnership group (PSP-group) is an example of parental involvement in the schools (Liverpool City Council, 1991). The PSP-group at a school in West-Everton consisted of twenty-five parents, all mothers, and the group had its own room with a kitchen-range at its disposal. The parents could come to the school on any day. Almost every day activities were organized for the group, including involvement in teaching sessions for the children. During the situation analysis, it was found that this group was interested in nutrition information and cooking sessions. Therefore, it was decided to organize a number of meetings with the community dietician for this group.

Rennes
Because a large number of the working population eats lunch in a restaurant every day, the steering group organized activities in restaurants all over the city. The aim of the 'Healthy Menus' programme was to promote low-fat meals. Any type of restaurant could take part (pizzerias, traditional French restaurants, pancake houses, self-service restaurants, fast-food outlets etc). Interest among restaurants appeared to be high and a total of twenty-five restaurant owners started to provide 'healthy' lunches indicated by a special logo.

Horsens
In 1992, Horsens celebrated its 550 year jubilee as a market town and the steering group took advantage of the week of celebrations organized for this occasion to focus on nutrition by developing a special exhibition for this festivity.

Cohesion

Another type of situation analysis focuses on how 'cohesive' a project area is. In chapter 6 it has been explained that cohesion consists of two components: 'neighbouring' and 'sense of community'. Neighbouring refers to interconnectedness or the number of communication lines in a community. A sense of community refers to the strength of those ties or to the extent individuals feel connected or related to each other and to the extent they identify themselves with the community.

Liverpool
The baseline survey in West-Everton included questions about cohesion (see chapter 6). Most of the respondents said they like West-Everton and feel part of the community. They regularly visited people in their street or block or had visitors of their street or block coming to their house, whereas they hardly interacted with people outside of West-Everton. One third of the respondents was member of a local club or organization such as a sportsclub or tenants association. The local pubs were visited regularly by 50% of the respondents and the local newspaper was read by 90% of the respondents. Overall, the cohesion measurement indicated that the community network in West Everton was strong and that initiatives of a local nutrition promotion approach could have a potential to diffuse quickly through the area by strong links among community members. Nevertheless, it was found that nutrition was not a salient subject so that it would be important to start with raising awareness (Röling & Smit, 1993).

Although cohesion measurement was only carried out in Liverpool cohesion was also experienced in Eindhoven. It was mentioned often by steering group members that community links were stronger in KB (the inner-city area) than in AB and that this was an advantage for the success of the project in KB. The rapid appraisal for the pilot project in Lliria (Valencia) included a similar type of cohesion measurement as a part of the RAAKS exercise (see chapter 6). The measurement was used to identify existing and non-existing relationships and communication networks between 'actors' in Lliria.

Funding

Funding has always been a major concern for the project steering groups. When the project started, each city had to find its own resources. Sometimes this slowed down the planning process or was a clear hindrance, especially when local steering groups made plans which they then could not execute due to lack of funding. Nevertheless, steering groups managed to find local resources as well as outside funding. However, a danger with outside funding is that a project stops as soon as the budget is spent. From this view, it was an advantage that resources already available in the community had to be found as it made the projects more independent and realistic. Therefore, an important part of situation analysis is finding resources in the community. Mobilizing resources in the community also stimulates involvement. Although most cities worked with small budgets, they have shown great creativity in the development and implementation of a wide range of activities.

Liverpool
Financial resources were provided through the Liverpool Dietetic Service, Dental Health, the Healthy Cities project and the Health Education Authority. Northern Foods funded a part of the international collaboration.

Valencia
In Valencia, a research grant from the Ministry of Health was available.

Rennes
The project activities were funded by the Health Insurance Fund and the Town Council.

Horsens
Activities in the hypermarket were paid for by the supermarket chain. This financial involvement also resulted in the fact that project meetings were held in the hypermarket. Furthermore, financial support was received from the Department of Agriculture of the Danish Ministry.

Another type of resource used were human resources: professionals getting official working hours available to organize and execute activities. Formal agreements about the time participants could spend on the project were especially important for the ones who had rigid job descriptions.

Rennes
Dieticians of the Health Insurance Fund were available for the project for a week to work in supermarkets behind a stand to answer questions of shoppers.

Eindhoven
Students of a local catering school prepared the healthy recipes in the supermarket. It worked in two ways: They could practice giving demonstrations and it was an attention attracting activity for the shoppers.

Review of situation analysis

In all, a situation analysis made it possible to develop a community profile and provided valuable knowledge for steering group members regarding possible links in the communities for new activities. Finding human and financial resources was a challenge although sometimes questions were raised about which organization was responsible for paying what. Since steering group members themselves were involved in identifying opportunities, it became apparent to them what was feasible. As various community members were interviewed, it created expectations about activities which were going to be organized. It was therefore important that a situation analysis was not too time consuming because of the risk of losing the interest and curiosity of the community members. Furthermore, for co-ordinators as well as steering group members, it was difficult to get a complete and up-to-date overview of the local situation. Outcomes of the situation analysis were not static and during the project several new constraints, but also new opportunities were discovered. Activities in a specific 'promising' setting (*e.g.*, supermarkets) could be disappointing, whereas, activities in another less promising setting (*e.g.*, schools) turned out to be a success. A situation analysis is therefore never complete or finished. Reanalysing the local situation and reflecting on what activities or approaches had been successful or disappointing appeared to be an important factor for continuation of the projects. Reflection was an important aspect in this respect and continued to play an important role in other phases of the project.

8.3.3 Building networks

Health promotion includes the principles of participation and collaboration. As explained in chapter 4, the target of change is the community system as a whole, made up of various subsystems or sectors, individuals, and the interrelationships among them. Building networks, or networking, can create a shared perspective on a problem and can help develop decision-making capacity to deal with it. Creating conditions for collective agency, a joint management structure for planning, preparing, implementing and evaluating tasks which has been agreed upon by the members of the network is one of the added values of networking (Engel, 1995).

One important part of networking is to create communication structures for the sharing of ideas, experience and information. However, networks can only exist for a purpose; to achieve individual aims of participants and/or to achieve something together. The creation of networks can serve to focus activity, know-how and people with similar interests. As was already outlined in previous chapters, the principles of participation are not only essential for health promotion activities, but also for health promotion research.

A first step in building networks is identifying who should be involved. It is not very difficult to identify organizations, but it needs much more effort to involve local

people (or volunteers). The choice of each city depended on the local interpretation of intersectoral collaboration and community participation. That interpretations can differ has also been explored in chapter 4. Nevertheless, in all cities initial steering groups consisted of people with various backgrounds.

Liverpool
Members of the project steering group in Croxteth were an assistant programmes officer of the Healthy Cities project who was involved in several projects in the area, a school nurse, a health visitor, two dieticians, a dentist, a nutritionist and a student.

Rennes
The steering group responsible for the implementation of supermarket activities in Maurepas and Colombier consisted of three representatives of the Town Council (The assistant Mayor, the head of the Health and Hygiene Department and the Healthy Cities Co-ordinator), the deputy director and a dietician of the Health Insurance Fund, the director and deputy director of the Association for the Promotion of Action and Community Events, a lecturer of the National Food and Farming Institute, a director and dietician of the Consumer's Association and two teachers of a college. In the project in Villejean, it was decided to develop stronger ties with practice and as a result partners of more locally based organizations were involved such as the local social centre, primary schools, the inhabitants association and the local library.

Horsens
The initial steering group consisted of a health visitor, a domestic consultant, a representative of the regional heart Association, a social health advisor, a matron, a nutrition consultant, a veterinarian of the Environment & Food Centre, a supermarket manager and two project workers of the Healthy City Foundation.

In each of the five cities, the initial emphasis was on programme planning rather than on building networks. Although adjustments of research methodologies were made during later phases of the projects, research carried out during the starting phase of the projects was mainly focused on determinants of behaviour and food consumption patterns. The results of these studies were helpful for planning the content of the activities but gave less insight into how the collaboration process among the different sectors could be facilitated (also see chapter 7). This sometimes resulted in situations where programme co-ordinators were carrying out their own plans without real support or feeling of involvement of steering group members or 'host'-organizations.

Horsens and Eindhoven
In most cities, supermarkets managers gave permission to organize activities in their shops, although they themselves were not always actually involved. Usually, steering group members were handing out promotional material or food to taste instead of supermarket personnel. In these cases, activities were not continued after project workers had departed. The 'wait and see' attitude of supermarket managers was related to the fact that they were unfamiliar with what was going to happen and what was expected from them. Of course, this was also the case for the project workers who were unexperienced in working together with the commercial sector. However, examples of cases where managers became enthusiastic and involved after a few experiences can be found in Horsens and Eindhoven. In these cities expenses for activities were paid for by supermarkets and promotional material was developed by the shops themselves after they had seen some examples.

Liverpool and Eindhoven
The planned recipe competition for school children of Croxteth was not very successful mainly because managers and teachers of these schools had not been involved in programme planning. At the time the contest was distributed to the schools by one of the members of the local steering group, the pupils and teachers were busy with exams. As a result the response was low. A similar type of competition in Eindhoven ('no garbage in my lunchbox') resulted in a successful event because teachers and managers were much more involved in planning. A higher involvement of teachers in a competition for first year pupils of a secondary schools in West-Everton also resulted in a more successful event. The teachers asked the pupils to design the cover and inside illustrations for a leaflet promoting fruit and vegetables. The pupils were asked to think of a slogan that would encourage people to eat more fruit and vegetables. A total of sixty-two designs were submitted and the winning leaflet was printed and launched during a special happening.

Valencia
The first experience with intersectoral collaboration was quite disappointing. The preliminary investigation had pointed out that Northern influences had also been affecting the diet of the citizens of Valencia. Programme planners therefore started to put all their time in developing an education booklet containing traditional recipes. When supermarkets, schools, neighbourhood associations, Fallas committees (Fallas being a big yearly festival in Valencia) and health centres were asked to collaborate they were not really enthusiastic because for them it was unclear what role they could play in promoting healthy diets. Finally, collaboration was only possible with the local schools and supermarkets.

During the annual business meetings of the SUPER project, the issue of involving other sectors has always been mentioned as a difficult task (see for example Vaandrager *et al.*, 1993b). Some steering group members complained about the fact that they had strict job descriptions and that their managers gave them too little space and time to carry out project activities on top of their on work. Another point was that reasons to become or stay involved were not always clear for the participants. It was experienced that it was extremely important at the beginning to clarify, amongst the members, what collaboration means and to identify limitations and opportunities. Various new attempts have been made to try different approaches.

Eindhoven
After a year of activities organized by different organizations in the two neighbourhoods, The Public Municipal Health Service developed a policy document clearly stating the aim and objectives of collaboration and expected roles of the different participants (Cosijn, 1994). This document has been produced and agreed upon by all the participants (also see chapter 7). Although the general consensus was that it would have been easier to have such a document at the beginning of the project it was also admitted that it would have been difficult to produce such a document without any practical experience.

Valencia
Project workers decided to explore in more depth the reasons and boundaries for collaboration. The city Lliria was selected for a pilot project to develop a tool to identify opportunities and constraints for an intersectoral nutrition promotion programme. The pilot project commenced with an inventory of available resources of local organizations and institutions interested in participating in the project in Lliria. The RAAKS method and the WHO Rapid Appraisal (RAP) were used to gather information for an action plan (see chapter 6). Personal and telephone interviews were carried out to obtain an overview of organizational resources, to identify existing and non-existing relationships and communication networks between 'actors' in the project, to analyse the opportunities and constraints, and to plan an intervention. The results of this new strategy were promising: most of the interviewed organizations were interested in developing and carrying out a local nutrition promotion programme and felt that they themselves could contribute to this programme. Of the 33 organizations approached, 28 were interested and willing to cooperate. In most organizations and institutions information or activities were available which could be used (Naafs, 1994). The new strategy gave a much richer picture of local possibilities and participants felt more involved because they themselves were asked for ideas and gained insight into the possibilities of the collaborating with the others.

Although exploring possibilities and expectations of all actors before commencing is important, it was also experienced that by just carrying out an activity ('doing something') visibility was increased and stronger links between the people involved were developed.

Horsens
Even though members of the steering group came together several times to carefully plan their strategy, motivation was low and most members were waiting for something to happen. However, the organization of the exhibition on behalf of the 550 year jubilee of Horsens as a market town created much enthusiasm and many of the members started to develop ideas and take responsibility.

The starting point of the SUPER project was to involve from the beginning a large representation of the community. However, it emerged that it could also be functional to start with a small group of motivated members who develop a strategy and pilot some activities. An initial meeting of the small group could enable the participants to decide what further input was needed, from where, and which other potential partners could play an important role in the project. Both projects in Horsens and Rennes started with a few representatives and after some time others were integrated particularly because they experienced a need for influential members. The composition of steering groups in other cities also changed with time. Loss of members was caused by natural events such as changes in staff or loss of interest. It was remarkable to observe that supermarket managers were often replaced to manage another shop. Some new members joined because they were specifically requested to join the steering group, but others were asked to become involved because they showed interest when they heard about the project.

Visibility of activities

Visibility of activities is an important factor for collaboration as well. This can be achieved by 'doing something together' such as decorating a stand, designing an exhibition or making healthy snacks and through project specific materials such as the Eindhoven shopping bag with healthy recipes, the Valencian healthy recipe book, or the Liverpool 'SUPER-fruit' leaflet. Special media attention, local reports, pictures and videos help create visibility of activities.

The role of the local co-ordinator

The role of a co-ordinator or 'community organizer' is pivotal for intersectoral collaboration. The co-ordinator is responsible for 'network management' or facilitating the networking process itself. This includes care of the network communication infrastructure, network operating procedures, the monitoring of network resources, activities and outputs, and the links with other organizations and networks (Engel, 1995). Koelen & Brouwers (1990) have therefore called a co-ordinator a 'system-integrator'. Personal involvement facilitates networking, and good contacts in the beginning of the project are important for follow-up.

The role of a co-ordinator was discussed during one of the yearly business meetings of the SUPER project. In general, this role was perceived to be important for positively influencing the progress of the project and possibilities for collaboration. Important requirements mentioned were: a strong belief in the health promotion principles, being a pioneer, flexibility, leadership skills, existing links within the community and support of a local organization (Vaandrager *et al.*, 1994a).

Eindhoven
A community worker of the Strijp area heard about the project in KB and AB through the local media. He is an enthusiastic person with strong ties in the community. He applied the approach within a very short time in his own community, using the learning experiences of the project in KB and AB. He managed to involve several local organizations and volunteers who participated with great enthusiasm and the project received a lot of media-attention. At the moment, new plans are being made for continuation of the project in this area.

Review of building networks

Overall, health promotion demands coordinated action from representatives of the various subsectors of a community. Each of the actors has his/her own philosophy, objectives, standards, need for protection of his/her domain and own finite horizons (Koelen & Brouwers, 1990). Collaboration can be hindered by a lack of or disappointing experiences, a passive attitude, different agendas and priorities, defensive and territorial attitudes, professional protection and invisibility of outcomes. It is necessary that actors feel the outcome of the programme as their own success or failure (ownership). A major step in sustaining and improving intersectoral collaboration is therefore the building of formal infrastructures based on

the wishes, possibilities and expectations of all the different participants. Actors involved have to recognise some common ground and responsibilities and must have the feeling that working together is worthwhile for themselves. The focus is on cumulative learning by all participants. The exchange of ideas and debate about differences lead to sophisticated information and definitions of the situation at hand and gives insight into situations which need improvement. The result can be a working agenda agreed upon by all participants, in which they acknowledge their own position and in which they feel involved (Koelen & Vaandrager, 1994). Developing contacts between various people and organizations is also a launch for organizing other activities together. However, bureaucracy can be a major constraint for 'participation space' and building and maintaining networks is very time-consuming.

8.3.4 Community participation

To date there has been little experience in endeavouring to involve the community. At the same time the community has little experience of becoming involved. Koelen and Jonkers-Kuiper (1991) have argued that the participation capacity of the community is low. Therefore, community participation consists of a learning process for both professionals as well as for community members.

Communication between professionals and community members within steering groups appeared to be difficult mainly due to inexperience of both sides. Professionals are used to attending meetings and making comments whereas most community members have no experience in expressing their views in a planning group. Furthermore, professionals tend to have an attitude of 'knowing what is best for community members'.

Apart from the lack of experience, the explanation of the concept 'community participation' has been different.

Horsens and Rennes
For project workers community participation was defined as involving local citizens in planning and execution while for those in Rennes it was initially interpreted as citizens taking part in the activities which had been organized by professionals.

Liverpool
The activities for the four month pilot nutrition promotion programme in West Everton were planned by the community dieticians but were presented in the meetings of the local Health Forum of Everton. Community members were represented in this Forum and they were asked to comment on the plans or propose alternative ideas. In general, community members were enthusiastic about the plans, but they were not really interested in becoming involved. The dieticians expressed their concern about the community having different interests.

A true bottom-up approach (community members coming forward with the issues) is difficult especially because the topic 'nutrition' was mainly chosen by public health researchers and health professionals who were convinced that intervention in this field was necessary because of high prevalence of nutrition-related diseases. The challenge therefore was to create learning situations in which community members started to ask questions. These situations were created by asking community members about their concerns related to health and nutrition, about possible solutions which they thought would have some impact and by asking them to give their opinion about the organized activities. Since community members initially were not really concerned about nutrition, they were difficult to motivate to join the steering group without having seen some visible examples of the project (*e.g.*, nutrition promotion activities or media attention). Sometimes it was easier to involve community members by organizing one or two concrete activities rather than by involving them in discussing a long-term strategy.

Eindhoven
It was experienced that several volunteers wanted to plan and organize one or two activities but were not willing to commit themselves for a longer time. Members of the project steering group were also worried that volunteers would be overloaded with work which they believed had to be carried out by professionals. Volunteers who were not members of a local organization could therefore not easily commit themselves to the projects to such an extent that they had a strategic role in programme planning. However, for volunteers who represented an organization, *e.g.*, a parent group, the local project groups provided good opportunities to play a broader role.

Review of community participation

Community participation has been a main challenge for all project cities. Simply approaching community members and asking them to participate in project planning and implementation proved to be unsuccessful. Asking community members to comment on the organized activities or results of evaluations through interviews or group discussions was appreciated and made explicit to community members that their opinion was seriously taken into account. It requires a considerable amount of energy to find ways of involving community members especially because nutrition is not often a salient subject. It is also important to demonstrate to them visible and concrete examples of the project work. Furthermore, it is easier to enlist community members who are associated with local voluntary groups such as the elderly association or a parent support group. This implies that a support structure is required for volunteers so that they can receive feedback and special arrangements can be made available such as training and allowance for expenses.

8.4 Try-out

8.4.1 Strategy

A first step in this phase was to facilitate the actors to agree on the plan of action based on needs assessment and situation analysis. A clear structure outlining the goals of each activity, roles, responsibilities, time table, type of activities etc. helped to structure the process. It was also necessary that this outline was flexible in order to respond to changes. Sometimes plans of action were not very realistic due to limited time and resources. Inability to carry out optimistic plans could lead to perceptions of the project as a failure. It appeared to be helpful to first do some field testing before developing or implementing a long-term strategy.

Valencia
Four supermarkets and eight schools participated in the promotional part of the project in Campanar and Ciudad Fallera. The IVESP offered to support all the activities at a technical level and made material available such as a project poster and the booklet 'Our Healthy Meals' containing healthy recipes of local meals (Gutiérrez & Colomer, 1991; Quiles, 1991). The schools organized various activities such as visits to local supermarkets, preparing menus and discussing them and special lectures given by the IVESP staff were held for the children. A two-week pilot intervention in the two supermarkets in each area consisted of a display of posters in the supermarkets and the handing out of 'Our Healthy Meals' booklet by research assistants to people who bought at least three healthy products. A second two week-pilot consisted of activities similar to the above mentioned together with interviews with shoppers and distribution of the information-leaflets about healthy products which were on sale.

Rennes
An action-week ('the healthy trolley') related to themes was organized in two supermarkets of Maurepas. These themes were: dairy products, fruit and vegetables, drinks, pulses, and oils and fats. The themes were supported by a tasting stand, an information display with leaflets, information about the food items on the display, recipes, nutritional advice from dieticians, games and videos. Efforts were made to emphasize pleasure, balance, conviviality, and a varied diet at low cost. A poster displaying a trolley filled with healthy food items and a brochure indicating the programme of events was used to promote the project. Furthermore, activities were promoted through articles in local newspapers. The 'Healthy Basket' project commenced in October 1994 and was carried out in another area of the city: Villejean. The local coordinating centre was the Social Centre. In this project, different community groups were selected and worked independently, with the help of professionals. Local nursing and primary schools spent time on nutrition during classes. The children of a community centre participated in different food and cooking activities. Furthermore, in the local library, different workshops were organized on food and 'gourmandaise'. Students of a local college devised a game about breakfast. A group of mothers generated a questionnaire with the aim to learn about shopping habits of others in the community and to establish a discussion group. These groups included activities such as cooking together. A special event was organized to address nutrition issues which are important for the elderly. Members of the local volunteers association participated in making contacts with the shop owners and by disseminating information.

Liverpool
The Croxteth Nutrition Group designed and implemented a pilot healthy eating campaign for the Croxteth community. The campaign consisted of activities in two local supermarkets, two open days at Croxteth Health Clinic entitled 'Healthy Eating For All Ages' and a recipe competition for primary school pupils. Nutrition promotion activities were planned for the local health clinics, community centres (mother & baby group and 50+ group), two primary schools, the parent support group (in most cases the mothers) and the local supermarkets (Illing, 1992).

Horsens
Members of the steering group developed an exhibition for the 550 year jubilee of the town which was displayed in the local hypermarket. The exhibition visualised the nutritional habits of the Danes in a cultural and historical context in 4 tableaus - 1442 - 1892 - 1942 - 1992. Various properties of the Museum in Horsens were made available in order to make the exhibition as authentic as possible. The main theme was to point out that certain basic elements in the diet had repeated themselves, but that the preparation, composition and ways of serving the food had changed. Furthermore, the project was presented to shoppers through leaflets, samples, 'healthy' cooking demonstrations and competitions for children ('The Hunt for Healthy Slogans'). Subsequently, the hypermarket had arranged that a number of 'healthy' food items were on sale within all provisional groups. During 4 successive months in 1994, many activities were organized in the same hypermarket where the exhibition had been displayed. The themes of these activities were chosen on the basis of the outcomes of the baseline survey which indicated that social factors, price and time are important factors influencing food choice. In collaboration with the Technical School of Vejle and the display manager of the local hypermarket the themes were emphasized through stands, displays, posters, competitions and tastings.

National and regional links

National or regional media nutrition education campaigns can create awareness but often support at local level is missing. In each city efforts were made to link up with these campaigns. However, for national organizations 'protection of domains' is an important issue.

Eindhoven
The Dutch Heart Foundation developed a project with guided tours through supermarkets which was carried out during the national 'Fat-Watch'-campaign in 1994. Municipal health organizations were specifically requested not to organize any activities in supermarkets during this period because organizers felt that this would 'interfere' with their campaign. However, they did offer the possibility to provide guided tours for local projects during the months succeeding the 'Fat-Watch'-campaign.

In the Netherlands it was experienced that entrusting a nutrition education instrument to local organizations can be more successful than trying to manage and implement it from national level.

Eindhoven
The Dutch Bureau of Nutrition Education sold a 'fatmeter' (an nutrition education instrument, see chapter 7) to the Municipal Public Health Services of Eindhoven and it has been a great success. Much attention in the local media resulted in the fact that many organizations and community groups have put in requests for the 'fatmeter'. When the instrument is used, local dieticians assist and are available to answer questions.

Review of Strategy

Overall, in each of the participating cities, several nutrition promotion programmes have been set up which were based on the results of baseline surveys. These activities created visibility of the project and various sectors and community groups such as schools, neighbourhood centres, supermarkets, restaurants and health centres became involved. This action focused on making healthy choices easy choices, improving access to 'healthy' food items in supermarkets, restaurants and schools. They centred on increasing awareness and knowledge and helping people to translate the knowledge in changing their food consumption patterns. The focus was on skills, such as the purchasing and preparation of food. The intermediaries or professionals (community workers, shopkeepers, teachers) realized that they can play an important role in the nutrition promotion. It is important that the activities are perceived as a continuous programme rather than a short project. Making realistic plans is important. If strategy is unrealistic it might be seen as a failure. Hands on experience in developing and implementing programmes can help actors identify their role within the strategy. However, too many isolated activities or lack of coordination can lead to failure to arrange a collaborative operation. Although a framework or action plan can help to sustain a project it needs to be flexible. The activities have led to local institution building and strengthening and increasing the capacity of people to participate and initiate action on their own. The working programmes do not only function as a guide for action but also as a tool for continuous evaluation (Vaandrager & Koelen, 1994).

8.4.2 Process evaluation of activities

The research tools used for process evaluation were personal interviews and group discussions with people who were involved in the project activities and with the organizers of them. It was beneficial to describe the course of the events and the learning experiences gained from them (see chapter 6). Most activities were carefully evaluated and subsequently discussed with people who had been involved in them. As a result ideas to improve existing ventures emerged along with proposals to develop new ones.

Liverpool
The four month action-programme in West-Everton was evaluated by a focus group discussion involving the local residents and personal semi-structured interviews with teachers (of the schools and the parent support programme), a dietician, the supermarket customers and supermarket managers (Bergman, 1993). Collaborating with the supermarket managers had been disappointing because even though they allowed project workers to organize activities, they did not show any interest to continue with them and were also pessimistic about its impact. The work with children of West-Everton was continued because the teachers were enthusiastic about the lessons and the pupils had enjoyed it. The work-sheets related to nutrition and fruit and other food to taste during the lessons were especially appreciated. It was not only the different approach to the subject that had made the teachers enthusiastic. Both teachers and pupils appreciated working with outsiders (the dieticians and a foreign student). It had attracted the pupils attention and had made them listen more carefully. One of the schools decided to develop a health policy (food being one of the issues) for the school.

Valencia
Only a few people had noticed the posters displayed in the supermarkets, although the lowering of prices and the distribution of booklets was known by 25% of the shoppers. Products which were emphasized by the campaign and which were most often mentioned to be bought were: vegetables, fruit, chicken, rice and pulses. Although nutrition promotion was considered important by the supermarket managers, they also stated that a longer period (four months) for the next intervention was necessary. They also felt that more information had to be offered to attract the attention of consumers and to influence their food-buying behaviour. Suggested activities by supermarkets managers were labelling of healthy products, articles in supermarket magazines, lowering prices of a broader range of healthy products and to focus especially on housewives and elderly.

Rennes
Interviews with shoppers indicated that personal advice and the tasting sessions were most appreciated. Shoppers were less interested in written information. Most people indicated that they were interested in healthy food to stay fit or to maintain good weight.

During the yearly international business meetings the process of each of the projects was evaluated as well. Presenting the project as well as working on the resource pack, forced local project co-ordinators to reflect on the work they were doing related to the SUPER project.

During the business meetings local co-ordinators were asked to present project progress, strengths, opportunities and future plans. Strong personal links amongst the project co-ordinators and the supportive character of the meetings contributed to the fact that people spoke freely about failures, difficulties and challenges as well as successes. Furthermore, they could compare their own experiences with experiences of others and discuss possible ways on improving future strategies. Again two goals were served: analysis of the course of the project as well as stimulating further action (Vaandrager, 1991; Vaandrager *et al.*, 1992b; Vaandrager *et al.*, 1993b; Vaandrager *et al.*, 1994a; Vaandrager *et al.*, 1994b).

At the business meeting in April 1994, it was agreed that all project co-ordinators would participate in the development of the resource pack. A special business meeting was held to discuss the details of the resource pack. Prior to the meeting, a

provisional framework to structure all the experiences was developed. Three processes, common to all cities, which underlined the purpose of producing the resource pack were identified. These were multi-sectoral collaboration, plan of action and policy development. This provisional framework was sent to all the participating cities for completion. For each of the stages, the cities were requested to use their own experiences and to complete the forms. From the comments received, general answers were formulated to the key stages taking into account each city's individual comments. Although many general points became apparent during the analysis of the answers sent back by the cities, it also raised many questions and discussion points. These were included in the first draft of the resource pack so that these details could be discussed in groups at the meeting (Vaandrager *et al.*, 1994a).

8.4.3 Process evaluation of intersectoral collaboration and community participation

During the business meeting in Liverpool in 1993 topics such as intersectoral collaboration and community participation received special attention. To stimulate the discussion participants were asked to use the participation measurement tool (see chapter 6) to address the situation in their city. Participants were split into three working groups. They examined each of the five indicators (needs assessment, leadership, management, resource mobilization and organization) and decided together where the programme should be plotted on the scale. All indicators were measured on the following five point scale: 1 = mainly professionals in charge; 5 = views, objectives and needs of all different participants (inhabitants, professionals, commercial people, voluntary groups etc.) are represented. The five indicators were visualized in a so-called 'spiderweb'. A narrow spiderweb signifies little participation, a wide spiderweb signifies broad involvement. The groups were asked to try and make a spiderweb on the diagram and to put forward any specific problems they encountered. The exercise was repeated during the business meeting in 1994 to see if the situation had improved in accordance with the wishes expressed in 1993.

Rennes
Needs assessment was assigned a value of 4 based on the argument that programme needs in Rennes were identified by scientists, doctors, teachers and parents. Inhabitants were represented by an association of the citizens but the citizens themselves were not members of the steering group. Therefore *leadership* was assigned a 3. Various actors with different backgrounds were involved and *organization* and *management* were therefore both assigned a 3. An observation was made that supermarkets managers agreed with the activities but were not active themselves. Resources were made available through different organizations; the National Public Health Network, the Health Insurance Fund and the Regional Health Promotion Budget. *Resource Mobilization* was therefore assigned a 4. In 1994, representatives of Rennes found that the spiderweb had narrowed because problems were encountered with leadership and no special attention had been paid to needs assessment. However, many new partners were found who had closer links with the community. There were also additional human resources available because of involvement of teachers and students.

Horsens
In response to questions from citizens, the Healthy Cities Foundation started with nutrition promotion activities, but it was felt that they failed to analyse the local situation and as a result, the baseline survey was carried out. Activities were organized together with steering group members, but as reflected in a 'narrow' spiderweb, the project co-ordinator was of the opinion that the members of the steering group were only a small representation of the citizens. A widening of the spiderweb was felt to be an important prerequisite. In 1994, representatives of Horsens again expressed a concern about the lack of a broad foundation of the steering group. They felt that a reason for this was that *leadership* was the responsibility of one person and that a shared responsibility-feeling was lacking. Nevertheless, the project had became more participative because the steering group came up with many ideas which had actually been carried out.

Liverpool
Initially, needs were principally identified by professionals, but later inhabitants were asked to give their opinions. In the future, representatives of Liverpool hoped to reach the score 4 for *needs assessment*. *Leadership* had been central because it was in the hands of professionals. It was questioned whether it was desirable to share leadership with many people. *Organization* was mainly the responsibility of the community dietician and this was perceived as 'narrow' participation. Initially *resources* came only from the Healthy Cities project and Northern Foods. At time of the meeting, the supermarkets were also making contributions and there were more human resources available. In 1994, it was felt that nothing had really changed. Representatives of Liverpool saw the way forward as being able to develop strategic plans on city level and to adapt more to community needs.

Valencia
Although needs were identified by professionals, citizens of Valencia agreed with the necessity of the promotion of healthy food. Therefore, *needs assessment* was assigned a 4. A large steering group had been brought together on regional level. Together they decided about the future strategy although the IVESP took the initiative. As a result *leadership* and *organization* were both assigned a 3. *Resource mobilization* was assigned a low score. Funding was mainly provided by the Ministry of Health. *Management* was assigned a 3, and representatives found this a desirable situation because participants had indicated that they wanted the Local Department of Health and Consumption, the IVESP or the Valencian Consumer Council to have a leading role. In 1994, representatives of Valencia found that the spiderweb had widened for all indicators except for *leadership*. Participation had improved through establishing technical groups for healthy nutrition.

Eindhoven
Representatives of Eindhoven were of the opinion that participation in *needs assessment* had been fair, because needs were mainly determined by the Wageningen Agricultural University through research and discussions with health workers. Ideas and actions were, however, evaluated and inhabitants were generally positive, but it seemed difficult to mobilize them to take part in the organization. Surprisingly, the representatives in Eindhoven assigned the indicators *leadership* and *management* low scores but stated that this was a desirable situation for the future. It was stressed that even though opinions of the different participants had to be taken into account, the main decisions had to be taken by a few people. Since many organizations were involved and each of them was responsible for their own activities, *organization* was assigned a 3. Money and manpower came from different groups (*e.g.*, from the elderly association, the supermarkets, the Municipal Health Service, the Dutch 'Praeventiefonds'). Therefore, *resource mobilization* was assigned a 5. In 1994, representatives of Eindhoven mainly found that the spiderweb in Eindhoven had widened and especially for the indicator *needs assessment*. On several occasions, local inhabitants had been asked to give feedback on the strategy and organized activities, and criticism and suggestions had been taken into account.

Review of process evaluation

The participation measurement tool was used to stimulate the discussion concerning the meaning of intersectoral collaboration and community participation. The concept behind this tool was to assist those involved in projects to describe their participation in projects and upon that basis plan future actions. It is a descriptive rather than a judgemental tool and does not attempt to argue that more participation is good or bad. It is also not designed to give a picture of reality, but a picture of how the participants judge their own way of working and to raise questions for reflection: Is this how we want the project to develop? Through discussions in small working groups, it was clarified that ideas about participation project representatives had and it was possible to plan a future strategy. By repeating the exercise on a yearly basis, participants could evaluate if they had managed to improve their strategy. It is difficult to compare the scores between the cities since all local situations are different. What can be compared is the way the different cities see participation and what they see as an ideal situation. In that respect it was interesting to learn that Horsens and Rennes, which are cities that used a similar approach, judge participation differently. Representatives of Rennes spoke about their situation as wide participation, whereas Horsens perceived it as narrow participation.

Regular reflection helps to solve observed problems. On the basis of process evaluation new plans were made consisting of repetition of successful activities and/or initiation of new ones. Continuous evaluation of the process or in other words, regular input, is an important prerequisite for supporting decision making in the ongoing process of health promotion.

8.5 Reflection

8.5.1 Individual outcome evaluation

Results of the baseline surveys had indicated that substantial changes in knowledge and attitude could not be expected, because high scores were already found before the activities had taken place. Furthermore, for health promotion, positive changes at individual level are not the only outcomes of interest. In each city a wide range of activities has been organized in different settings and for different target groups. Likewise, communication structures among actors of the food and health system have been set up and thus a social foundation for change has been created (see previous paragraphs).

Nevertheless, change of individual knowledge and attitudes as a result of activities in supermarkets has been more or less achieved in all cities. In general, people appreciated these activities although sometimes the efforts were associated more with commercial activities than with health promotion activities. The effects on individual nutritional behaviour obtained as a result of the activities in supermarkets in the different countries were varying.

Liverpool
The activities in the supermarket in Croxteth were evaluated by a second inventory, an interview with the manager and an analysis of the sales figures. Furthermore, six hundred people who visited the healthy eating stall in the supermarket received a postal questionnaire. The evaluation pointed out that there were no real changes in food availability, price, labelling and display in the supermarkets. Response of the self-completed questionnaire was relatively high; 69% had returned it by mail. A 'healthy eating' stall next to the entrance of the supermarket and a trolley containing healthy food items had attracted much attention. The respondents considered themselves to have an interest in healthy eating. They reported that the activities in the supermarkets had made them more aware of healthy eating. Nearly half of the respondents indicated that they had changed their eating behaviour in the desired direction. However, many of these respondents were, in fact, still eating high-fat food items. Since there were no baseline data (pretest) and no control group data available it was not possible to check if this claimed behavioural change was actual behavioural change and if it was related to the supermarket activities. Nevertheless, the high response to the questionnaire (which could 'carefully' be interpreted as a high involvement with the subject) and the results seemed to show that healthy eating activities in supermarkets helped shoppers to find a way to make 'healthy' food choices and improve their diet in general (Snel, 1992).

Valencia
Telephone interviews were carried out, with a sample of the general public to evaluate the supermarket activities. In addition, personal interviews were carried out with headmasters, school teachers, and supermarket managers. It was found that the interventions had not been very successful in changing individual behaviour. The evaluation demonstrated that promotional activities had not been noticed by many shoppers and that shopping behaviour had not changed (Pauw, 1992).

Horsens
Activities in the hypermarket took place during four successive months in 1994. Shoppers were interviewed at the till to find out if they had noticed the activities. It appeared that many shoppers had seen the stands and posters, but that people often could not reproduce the message or did not have a correct understanding of the aim of these activities. Sales figures were collected and a number of sales figures of the promoted food products had increased during the intervention period.

Sales figures can be simple indicators to use for studying tendencies in food consumption. The advantage is that they are cheap data compared to traditional food consumption studies; they are already available since supermarkets use them for planning the stock. A disadvantage is that the commercial sector is not always able to readily give these figures out because of competition with other supermarkets and that different supermarkets use different systems so that they can be difficult to compare.

Review of effect evaluation

As was already pointed out in chapter 7, only minor behavioural changes have been found. The results however, indicate a promising trend and behavioural change is only one aspect of outcome of health promotion. The fact that communication infrastructures have been set up and that many activities have been organized and continued in various settings can be considered equally as relevant. This will be further elaborated upon in chapter 9.

Furthermore, measurements of behavioural change only indicate representations at a given time and therefore need to be repeated at intervals to be able to examine trends.

8.5.2 Policy development

Although working locally improves possibilities to involve community members, it also implies a certain restriction because many local initiatives depend on decisions of people on higher levels. Policy development is therefore explained as trying to influence key decision makers on a higher level such as directors of local organizations, supermarket chains and local politicians. It is important to start this process from the beginning. However, without having anything concrete to show, it

is hard to convince these key decision makers. Therefore, in most cities these efforts were made in a later phase.

Liverpool
The intersectoral Nutrition in Action Group was set up as an autonomous task group coordinating nutritional activities in Liverpool. In 1993 the Nutrition and Action Group was subsumed under the umbrella of the Heart Disease task group, one of the six task groups of Liverpool Healthy City 2000 Project. The group prepared a nutrition strategy for the city in 1993 (Liverpool Healthy City 2000 Project, 1993). The long-term aims of this strategy are to work towards the achievement of dietary-related targets as highlighted in the national White Paper 'The Health of the Nation' and to promote the improvement of the diet and nutrition of the general population. The short-term aim is to provide a primary focus for improving the diet and nutrition of schoolchildren using a 'whole school' community-based approach. The activities within the framework of the SUPER project were also included in this strategy. The project in West-Everton mainly focused on schools, including children and their parents which reflected the priorities of the nutrition strategy.

Valencia
As a new strategy, it was decided to build up a nutrition network in the Valencian region. For this purpose a rapid appraisal (RAAKS) was carried out to identify the Knowledge and Information System of the food sector in the Valencian region (see chapter 6). A total of thirty actors were interviewed of which sixteen agreed to establish a steering group (Boonekamp, 1993). One of the ideas developed by the steering group was to use a network that already existed to set up the project. For this reason the Healthy Cities Network in the Valencian Community was chosen. The objective of the new strategy was to set up a framework for nutrition promotion programmes at individual, environmental and policy level in cities of the Healthy Cities network in the Valencian Community. Within the Healthy Cities framework, a new network was set up: the nutrition Multi City Action Group. Fourteen cities agreed to participate in this network.

Eindhoven
A policy document was developed and a local co-ordinator was appointed by the Public Municipal Health Services (see chapter 7).

At the time of writing this doctoral dissertation, policy development in each of the cities was still in its infancy. Policy development is increasingly felt to be an important aspect for the continuation and sustainability of the projects. In each of the five cities examples of policy development can be found. Learning experiences have made it possible for those involved to make requests for support on a higher level of aggregation.

Finally

A review of the project as a whole and its learning experiences for health promotion will be discussed in chapter 9.

9 Discussion and conclusions

9.1 Introduction

The five case studies reported in this doctoral dissertation give us insight into both the practical and scientific value of the health promotion approach in the field of nutrition. It has been argued that the starting points of health promotion are fundamentally different from health education. Health promotion uses a broader perspective, is more context specific, is partly unpredictable and requires flexibility for practice as well as for research. A basic principle of health promotion is a shift from interventions imposed from above to the facilitation of an ongoing process, creating a physical and social environment that enables individuals to interact and gain more control over environmental factors and thus, their own health.

Working according to health promotion principles does not mean waiting for communities to come forward with ideas to find solutions for problem issues related to nutrition. It is unrealistic to expect that this will happen. The challenge is to create learning situations in which both community members as well as actors of the support system (actors of the health, social, political and economic sector), recognize these problem issues and become involved in the search for solutions and the implementation of these solutions. Issues related to nutrition which require concerted action involve, amongst others, incidence of nutrition related diseases, access to food and information related to food, ecological issues, food safety, food production and food supply. Once learning situations related to nutrition have been created, community members have to be supported step by step through an active process of dealing with these issues. Thus, instead of professionals imposing information on people, a process has to be stimulated so that people themselves start asking questions about nutrition. A prerequisite is then, that professionals (actors of the support system) recognize the fact that they can support this process.

Whereas individual change has been most important for health education, the change of all actors in the food and health system is most important for health promotion. It implies that actors of the support system (actors of the health, social, political and economic sector) have to be willing to change themselves before they can expect changes from community members. These actors need to learn to collaborate, look over the boarders of their respective domains and learn to listen to the community. At the same time community members need to learn that they can affect their own

situation, that they can influence decisions of policy makers and that their efforts are worthwhile.

These viewpoints are not only present in the field of health. Within the field of agricultural extension, for example, there has been a similar major shift in approach. Instead of promoting the transfer of ready-made technologies, the emphasis is on building on farmers' capacities to access external information when they need it, on developing farmers' ability to experiment and draw conclusions, on enhancing farmers' individual and collective ability to make sound decisions, and on empowerment (see chapter 4). The ideology behind government policies related to environmental problems is also shifting from regulation to facilitating communication among the various stakeholders (Woerkum & Aarts, 1995).

Research in the field of health promotion has lagged behind (see chapter 1). A possible explanation for slow development is that researchers have experienced many problems with existing research methodologies. Health promotion is complex and difficult to control. It is therefore hard to meet criteria for both internal (see chapter 7) and external validity. In this respect Lincoln (1992) and Vaandrager & Koelen (1994) remark that in the ongoing discussion about health promotion research, the central question is whether we should continue to utilize the dominant model for research and evaluation (also referred to as the conventional, scientific, or positivist paradigm) or whether it might be legitimate to switch assumptions, in order to make the evaluations more closely 'fit' with the assumptions of the projects themselves, and indeed, with health promotion as a social and cultural phenomenon. Due to the fact that the SUPER project has been carried out in five different European cities, a lot of practical and scientific experience has been gained. Each local situation and its respective culture is different. However, many similarities were found, especially regarding the process of collaboration and participation. This was also the case when the same approach was initiated in other areas of the cities involved in the SUPER project or on higher levels (city or regional level). Furthermore, comparable experiences have been found for projects in the Netherlands, which have been working according to the health promotion principles in the field of nutrition on community level (Bokma *et al.*, 1994; Braaksma, 1994; Jong 1994; Vries, 1994) or on regional level (Böhmer-Donkers & Kroesbergen, 1995). Generalisation of how to initiate and support the health promotion process is therefore very possible indeed.

In this concluding chapter the discussion will look at what has been gained and learned by all the efforts undertaken in the SUPER project. In the first chapter three research questions were posed. In this chapter answers to these research questions will be dealt with. Firstly, the utility of the health promotion approach in the field of nutrition will be discussed followed by a review of critical success factors. Then, it will be addressed whether the knowledge gained by this multiple case study is suitable for other cities and topics and what the learning experiences imply for

nutrition policy and the Ottawa Charter. Finally, recommendations for health promotion research will be made.

9.2 Utility of the health promotion approach in the field of nutrition

In all five countries of the SUPER project fat intake is too high and fibre intake is too low. National governments of these countries have drawn up general guidelines for a healthy diet differing only on some minor points (see chapter 2). These guidelines are predominantly implemented by the information supply: trying to change attitude and behaviour of the individuals by means of transfer of information and education. Nutrition education, if interpreted as transfer of knowledge by professionals to educate individuals, is known to be a relatively unsuccessful strategy to improve diets. Over the years many efforts have been made to instruct people what they should eat which has resulted in the fact that many people nowadays seem to know the facts (*e.g.*, the need to cut down on fat, see chapter 7 and 8) related to nutrition problems. However, most individuals are not behaving according to the recommendations or nutritional guidelines set by governments. Furthermore, healthy eating is perceived as boring, restricting and untasty, especially, because of the paternalistic nature nutrition education always had. Since many studies have failed to find more than modest correlations between knowledge about diet and eating behaviour, there is a growing concern about the impact of transfer of knowledge as a possible strategy to improve diets. What people buy and eat depends on individual, social, cultural, economic and environmental factors (see chapter 3). These factors are interrelated and altogether, food choice is a complex process which explains why information supply on its own is insufficient as a strategy to promote healthy eating.

In the SUPER project it was therefore decided to choose an alternative approach: the health promotion approach as advocated by the Healthy Cities project of the World Health Organisation. The first overall conclusion is that the experiences of the five case studies taught that in principle it is possible to stimulate and facilitate an ongoing process in the field of nutrition that creates a social foundation for improvements in health. This conclusion requires some explanation.

If the results of the five case studies were to be studied from a health education perspective then the project can be judged as a failure: only minor changes in nutritional behaviour have been found (see chapter 7 and 8). However, going back to the starting points of the SUPER project (see chapter 1), change in nutritional behaviour was not the sole objective. More importantly, it was argued that behaviour change is a slow process and that unless a number of preconditions have been fulfilled (as expressed in the process objectives), change of behaviour and maintenance of this behaviour could not be expected. The SUPER project has been relatively successful in meeting these preconditions. Networks and the activities

initiated in the five project cities have been incorporated into the local structures so that the health promotion approach in the field of nutrition has become a structural approach. Intersectoral collaboration resulted in complementary strategies including creating supportive environments, organizational change and social and individual development. The interactive character and the importance of linking to local possibilities in the approach have resulted in independency of the projects, i.e. projects do not only rely on outside funding and outside human resources. In the long term, projects can probably run on local resources. However, external funds remain desirable. Practical tools for health promotion programmes have been developed. At the moment, based on the experiences in the five cities, a resource pack to be used in other cities and communities, is being developed which contains guidelines for planning, implementation and evaluation of health promotion activities, with special reference to cooperation, communication, management and research techniques. There has also been a positive change in environmental factors (both physical and social) which influence public nutrition. Examples of these changes are the willingness of supermarket managers to continue with activities, repetition of successful nutrition promotion activities in different community settings and schools paying more regular attention to nutrition education. However, most importantly, actors within the local nutrition and health systems are communicating with each other. Interest, curiosity and awareness has been created and those involved have experienced ways of working together effectively. By means of encounters and discussions, mutual dependencies have become clear, creating possibilities for negotiation.

9.3 Success factors

A second question which has been put forward in chapter 1 is the question concerning what factors contribute to success or failure in developing a health promotion approach aimed at improving public nutrition. Failure and success factors are interrelated and it has been decided to discuss them from the success point of view. Four success factors can be classified: (1) reflection and flexibility, (2) cultural change, (3) visibility and transparency and (4) the role of a community organizer.

Reflection and flexibility

Health promotion is an ongoing process of decision making. The health promotion approach is complex and accepts that there are several possible solutions for the problems encountered. The exchange of opinions about solutions amongst the different actors of the food and health system and agreement about objectives, priorities and approach, helps to find effective solutions for the observed problems. However, strategies and outcomes have to be evaluated during several phases of the programme. In the different projects reanalysing the situation and reflecting on what

had been successful or not appeared to be an important determining factor for continuation. This was the case for reflection on local level as well as on international level. Going through the process step by step has led to local institution building and strengthening and increasing the capacity of people to participate and to initiate action on their own. Because activities were evaluated and results were discussed, this immediately resulted in ideas for improvements or alternative strategies to tackle problems. Thus, a clear structure outlining goals of each activity, roles, responsibilities, time table, type of activities etc. helped to structure the process, but it was also necessary that this outline was flexible in order to respond to changes and to incorporate the learning experiences in programme planning. Continuous evaluation of the process or in other words, regular input, is an important prerequisite for supporting decision making in the ongoing process of health promotion. However, learning by doing requires flexibility since many of the project strategies had to be adapted along the way.

Cultural change

Intersectoral collaboration and community participation involves a learning process for both professionals as well as for community members. Whereas downstream movement of information (information transfer from professionals to the public) used to be most dominant in the past, health promotion requires the upstream movement of information to become equally important. In chapter 4 it has been stressed that an interactional approach with active sharing of information and dialogue between professionals and community members is required for a food and health system to achieve its full potential. In general, health professionals agree with these principles, but the way in which principles have been translated to practice differs widely. The interaction process, i.e. community participation and intersectoral collaboration, involves a radical cultural change. Actors have to learn what this means and how it can be beneficial for themselves as well as for the system as a whole. The focus is on cumulative learning by all participants and not only on learning by community members. The target of change is the community system as a whole, made up of various subsystems or sectors, individuals, and the interrelationships among them. Old role definitions have to be abandoned and new ones are required. For example, a health promotion officer's role might change from sitting behind a desk developing health education material to becoming a facilitator with close links in the community who provides a communication infrastructure for the actors of the food and health system. There must be a willingness of intermediaries to change themselves before they can expect others to change and community members have to learn that their contribution is valuable.

Visibility and transparency

Visibility is important for four aspects of health promotion in practice: (1) visibility of process and outcomes (output), (2) visibility of activities (input), (3) visibility of

possibilities and contribution of the actors involved and (4) visibility of health promotion principles, procedures and approach. All four can function as incentives for action and continuation.

The importance of visibility of process and outcomes has already been discussed in the previous paragraph (reflection). In paragraph 9.7 it will be discussed that research can play an important role for visualising these aspects.

Visibility of activities initiated through the project is an important factor for involvement because ideas and plans which have been made together become concrete and actors involved are able to show the results of their 'invisible' negotiation processes to outsiders. Visibility can be achieved by 'doing something together' or through project specific materials. Special media attention, local reports, pictures and videos can help creating visibility.

Visibility of wants, possibilities and expectations of all actors involved in the health promotion process is also critical. Actors in the food and health system have to recognise common ground and responsibilities and need to have the feeling that working together is worthwhile for themselves. Because of the multi-disciplinary nature of the networks (local/international), a variety of skills and expertise is available, as each participant, institute or organization has different qualities. Visibility of the fact that their combined contribution becomes more than the sum of their individual contributions (synergy, see chapter 1) is therefore important. 'Looking in each others kitchen' creates better understanding of each others goals, working strategies and possibilities. The exchange of ideas and debate about differences leads to sophisticated information and definitions of the situation at hand and gives insights into situations requiring improvement. Successful collaboration is related to clear role descriptions of participants based on their own wishes and possibilities. It must become transparent what actors contribute themselves but also what others contribute to the process.

Health promotion is based on a number of principles or starting points. It is a relatively new approach with an ideological basis. If these principles have little meaning in practice, there is the danger of the approach being criticized as rhetoric or 'lip-service'. In practice, health promotion means more than just formulating principles. The whole process requires much energy to 'accurately' translate the principles into practice and to carry on. Actors trying to initiate or support the process of health promotion must therefore make it very clear and transparent what they want and why and how they are going to accomplish their goals.

Community organizer

Throughout the project it became increasingly apparent learned that the role of a community organizer or a 'system-integrator' (Koelen & Brouwers, 1990) is an

important element for the success of health promotion practice. The community organizer is responsible for 'network management' or facilitating the networking process itself. This includes care for the network communication infrastructure and sharing of ideas, experience and information. Personal involvement facilitates networking and good contacts in the beginning which are important for follow-up. A community organizer can contribute to a positive and trustworthy atmosphere within the network so that actors can sympathise with each other's circumstances. However, the task of a community organizer is much easier when strong links in a community are already present. It is easier to work according to the health promotion principles in a 'cohesive' community, i.e. strong links between organisations or community members, than in a community where links first have to be established (see chapter 8).

9.4 Generalisation of the practical findings

The activities of the SUPER project originally started on a small scale (within neighbourhoods of cities) but have been expanding to other areas (Rennes, Eindhoven, Liverpool), to the whole city (Horsens, Eindhoven), the region (Valencia) and also to other cities in Europe (Amadora in Portugal, Cagliari in Italy and Charleroi in Belgium). The SUPER project originally only focused on community level. This had the advantage of being closer to people and of being visible and concrete. It resulted in an opportunity structure for health promotion on community level.

Multiple case studies such as the ones of the SUPER project are essential for demonstrating replication. Because the case studies were carried out under different circumstances there is a potential to draw conclusions about the utility of (new) research methodologies, the quality of achievements and the processes in force in health promotion projects. The results can be used for developing strategies in other communities (Koelen & Vaandrager, 1994). The resource pack of the SUPER project is an important outcome for the dissemination of the practical learning experiences. This resource pack is not going to be a recipe book with strict guidelines, since each local situation is different. However, it has emerged from the study so far, that processes are quite comparable and the learning experiences can be very useful for others.

As stated earlier, interaction processes are not only of interest in the field of health promotion and nutrition. For extension science in general, these processes are of increasing importance. Therefore, many of the experiences do not specifically relate to activities in the field of nutrition but can also be applied in other fields such as agriculture or policy development.

However, what happens at local level, for example, in supermarkets and in schools, is strongly embedded in higher levels of a supermarket chain or in a school curriculum. It is therefore also important to get actors together on a higher level of aggregation. This should improve motivation to adopt the health promotion philosophy at a higher level and lead to more flexible job descriptions, more space for local changes and for support of community involvement.

The results of the project so far, can also be extended to the approach of nutrition education at national level. A shift is required from informing the public and trying to influence nutritional behaviour through mass media campaigns to facilitating the process of health promotion. Facilitation can mean that:

- funds are made available to support existing local activities or to support initiation of new ones;
- information is made available related to specific local needs;
- certain nutrition education instruments (*e.g.*, the fatmeter) are being offered to local organizations;
- the whole idea of health promotion is being activated on a high level for the political administrative system as well as for different components of the food supply chain, and especially for the last link of the food supply chain: the supermarkets; and
- the health promotion principles are incorporated in consumer organizations.

9.5 Implications for nutrition policy

To date, nutrition policy in European countries has mainly focused on information supply (see chapter 2). Based on the experiences in the SUPER project, it is crucial that national and local governments start facilitating the debate between actors in the food and health system (also see 9.4). Local, regional and national governments need to create situations in which important actors of the support system recognize their interdependence and feel responsible for improving public nutrition. In other words, governments have to be more concerned about organizational infrastructures and less about information supply. In the Netherlands a first attempt has been made to facilitate intersectoral collaboration on national level. In 1989 a Steering Committee on Healthy Nutrition was established which is a cooperative consisting of representatives from trade, industry, consumers, health educators and government (see chapter 2). In spite of the multisectoral identity of this committee, the main outcome to date has been a yearly mass media campaign (The Fat-Watch campaign) which endeavours to educate the public about the need to cut down the fat consumption. Members of this committee should be challenged to support the local health promotion approach since they are in fact the 'managers' of the local actors.

Although there should be more emphasis on links and dialogue among actors, it does not mean that nutrition information itself is redundant. However, present-day nutrition education is still strongly focused on distribution of information whereas there is a need to go more towards an information-on-demand strategy. The existing national organizations, such as The Netherlands Bureau for Nutrition and Food Education, or The Health Education Authority in England should consider this new strategy. The information-on-demand strategy ties in very well with the health promotion principles, because the emphasis is on self-activity, taking own responsibility and supporting the search for problem-solving. Consultation media (telephone, database, teletext, or internet) are very suitable to supply people with information on moments that they themselves need this information. Within this design, it is possible to have information available about how projects such as the SUPER project can be initiated and supported. Overall, educational material is necessary, but it is important to make more use of what is available and to try and improve connections to existing questions or questions which are raised through the interaction and participation process.

9.6 The Ottawa Charter

In theory, health promotion principles are obvious targets for improvements in health. However, these principles need to be applied in a practical setting. Due to the fact that the SUPER project has been carried out in five different cities, a lot of experience has been gained. Therefore it is important to link this experience back to the principles of the Ottawa Charter, i.e. the principles of health promotion.

Building healthy public policies

The first principle of the Ottawa Charter (WHO *et al.*, 1986) is that 'health promotion policy requires that the obstacles to the adoption of health promoting policies are identified in non-medical sectors together with ways of removing these obstacles. Health promotion requires to go beyond health care and health should become an agenda item for policy makers in all areas of governmental and organizational action'.

This principle means that nutrition policy is more than taking care of treatment of nutritional problems (diabetes, obesity, etc.) which was actually already the case. This approach requires more than information transfer and especially needs to include involvement of the food production sector in solving nutrition problems. In the SUPER project it was learned that practical examples are needed not only to clarify what type of political support is needed but also to convince policy makers. Research plays an important role in visualizing the requirements and can indicate responsibilities of the actors of the different sectors.

Strengthening community action

The second principle of the Ottawa Charter (WHO *et al.*, 1986) is that 'health promotion needs to work through effective community action. Professionals must learn new ways of working with individuals and communities, working for and with rather than on them'.

In the SUPER project it became clear that not only do professionals have to learn to work with individuals, individuals also have to learn what it means to participate and what they can achieve by participating. It was also learned that there are various forms of community participation and that it is important for facilitators to reflect on their interpretation of this principle. The organized efforts in the SUPER project included creating community awareness, joint problem analysis, consensus building about possible solutions, planning, implementation and evaluation.

This second principle should therefore include the notion that community members need to become experienced in participation. Active community members (or volunteers) also need a support system, for example, a local organization which backs them up and which provides feedback and training. Furthermore, 'effective' community action is not as easy as it seems: it requires much energy and a general cultural change.

Development of personal skills

The third principle of the Ottawa Charter (WHO *et al.*, 1986) is that 'health promotion supports personal and social development through providing information and education for health, and enhancing life skills. It enables people to exercise more control over their own health and over their environments. This has to be facilitated in the school, at home and in community settings'.

Nutrition promotion activities in the various settings of the project areas in the five cities have focused on increasing awareness, improving nutritional knowledge, helping community members translate the knowledge to their food consumption and on developing practical skills, such as food preparation and purchasing. In most cities positive trends of knowledge and attitude change were found. Promotional activities were of a positive nature, trying to incorporate cultural and social values of food. However, to maintain the focus on nutrition, continuous action is required.

An important addition to this principle is that strategies for personal development should be more directed towards information-on-demand. Health promotion has to create learning situations in which people start asking the questions. Or in other words, a situation where people want to learn certain skills rather than that information is imposed on them.

Creation of supportive environments

The fourth principle of the Ottawa Charter (WHO *et al.*, 1986) is that 'health promotion recognizes that both at the global level and at the local level human health is related to the way in which we treat nature and the environment. Health cannot be separated from other goals and changing patterns of life. Health promotion creates living and working conditions that are safe, stimulating, satisfying and enjoyable'.

Intersectoral collaboration in the SUPER project resulted in complementary approaches including creating supportive environments, organizational change and social and individual development. Most activities that have taken place show that a little creativity can make small budgets go a long way. Nutrition promotion has been built into existing structures which has the advantage of being more sustainable. In the SUPER project supportive environments for making 'healthy' nutrition choices were created not only through activities at point of purchase in supermarkets but also by a number of different activities in various other community settings. Not only was healthy food emphasized but so too were environmental issues and sports.

There is still much to be done to actually meet this fourth principle although the SUPER project contributed to making conditions for a 'healthy' choice stimulating and enjoyable.

Reorienting health services

The fifth principle of the Ottawa Charter (WHO *et al.*, 1986) is that 'health promotion in health services should be shared among individuals, community groups, health professionals, health service institutions and governments. The role of health services should move beyond clinical and curative services. Increased attention to health research as well as changes in professional education are required'.

Traditionally nutrition education has mainly been a field of interest for dieticians. On the basis of the five case studies, it was experienced that in the field of health promotion and nutrition, actors from other sectors have to play an important role as well. As a result of the intersectoral way of working, many organizations and groups got involved, such as supermarkets, community and health centres, schools, libraries, restaurants and fairs. Initially, many people showed scepticism about working with supermarkets, but in general supermarkets appeared to be very cooperative and important partners.

To achieve that health, in this case nutrition, becomes an agenda item in all areas, it is necessary to learn to collaborate and for all actors of the food and health system to understand their interdependence and the possible synergy of working together. In addition, it is necessary that professional education in the field of dietetics and nutritional sciences pay attention to the fact that people are social beings and that

food has other important meanings than just nutrition. Furthermore, attention should be paid to the role of the various actors affecting individual nutritional behaviour and how to stimulate the debate amongst them rather than teaching students how to educate the public.

Enabling, mediating, advocating

Finally the Ottawa Charter (WHO *et al.*, 1986) states that 'good health is a major source for social, economic and personal development and thus for quality of life. Health promotion action aims at making these political, economic, social, cultural, environmental, behavioural conditions favourable through *advocacy* for health. Furthermore, health promotion action aims at reducing differences in current health status and at ensuring equal opportunities and resources to *enable* people to achieve their health potential. Professional and social groups, and health personnel have a major responsibility to *mediate* between differing interests in society for the pursuit of health'.

Health promotion research can contribute to these three prerequisites. Advocating for health can be supported by making nutrition facts and inequalities in access to food visible. Through community analysis, opportunities can be identified for enabling people to make a healthy choice. Studying opportunities for collaboration can support mediating between different partners. Cohesion and network studies (Liverpool, Horsens and Valencia) have given insight into the structure of communities and networks that can be built upon or strengthened. Triangulation, measures of participation and group discussions have allowed reflection and recording of the process and outcomes.

This overall principle should therefore include the important role of research to allow advocacy, enabling and mediation.

9.7 Health promotion research

In chapter 5 it has been explained that in the SUPER project there is a strong interrelationship between action and research. Research has been integrated in the action-process rather than being a separate activity. In the SUPER project it was experienced that health promotion research development has lagged behind. Although the project originally started to work with traditional research methodologies, it was soon experienced that stimulating participation in practice also required research to be more participative. Experienced limitations were related to the dominant research interest of individual behavioural change, the quasi experimental design, the role of the researcher as an outsider, and the high costs involved in 'proper' scientific research. The danger was that it became more an issue of how to measure behavioural change than how to affect behavioural change (see

chapter 6). For health promotion research, changes in social and physical environment are equally important as individual behaviour change. The researcher is also an actor in the system (or insider) and the quasi-experimental design does not fit with the health promotion principles. Since collaboration and participation processes were assumed to be key characteristics for successful health promotion, research supporting and evaluating these processes was felt to be needed. Additional research techniques and combinations of research methods, appropriate for each local situation, were developed during the course of the project.

In the beginning, the project's needs assessment and situation analysis worked as a mandate for change. It appeared to be most valuable to analyse the situation from different points of view, also referred to as triangulation. Equally important was to identify and link up with existing networks. Interviews with key informants (personal or in groups), the cohesion measurement and the RAAKS-methodology appeared to be helpful in identifying these opportunities. A description of the course of activities and discussing the results with the people involved was beneficial for adapting plans and incorporating learning experiences. To study and improve the process of collaboration, the participation measurement instrument was used. This methodology gave insight into the quality and conditions for cooperation and participation in decision making and could be used to improve this quality as perceived by the participants. The outcome evaluation included surveys of individual knowledge, attitude and behavioural change and investigations of changes in the shopping and living environment. These findings were used to translate the results into local policy and to adjust the long term strategies.

By making research methodologies 'fit' more closely to the principles of health promotion, the researchers involved in the SUPER project began to catch up with practice although there is still much work to be done. The research methodologies used in the SUPER project need further testing and adaptation. In addition, the development of new participative research techniques needs to continue.

Of course, with respect to the case studies presented in this doctoral dissertation, a number of other questions remain. Long term effects of individual behaviour have to be studied to verify that the projects have managed to create the preconditions for behavioural change. There is a also a need to study further the conditions for change. The main emphasis within the SUPER project has been on involvement in issues related to nutrition and health. The question remains as to issues relating to food production, food safety and ecological issues.

9.8 Finally

It is extremely difficult, if not impossible to finish describing the process initiated in the SUPER project. At the time this doctoral dissertation was written, many new initiatives were being developed which could not be included. Furthermore, during the past few years the project has expanded from a five country study to an eight-country study. The projects in the 'new' cities, Amadora (Portugal), Cagliari (Italy) and Charleroi (Belgium) could not be described in this dissertation although they have made valuable contributions to the overall project. This dissertation is therefore never really finished and it is only a reflection of four years of the SUPER-'programme' in practice and not of a complete whole.

.....TO BE CONTINUED.....

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Abstract

There is a strong consensus that nutrition issues in Europe play an important role in public health. During the last half century Western diets have become unbalanced. They now contain too much fat, too much sugar and salt, and not enough fibre. The best diet to reduce the risk of heart disease is one which protects against obesity, diabetes, common cancers and other western diseases, and also promotes general good health. Nutrition education, or transfer of information, is known to be a relatively unsuccessful strategy to improve diets because only modest correlations have been found between knowledge about diet and eating behaviour. What people buy and eat depends on individual, social, cultural, economic and environmental factors. In short, food choice is a complex process. Information supply on its own is insufficient as a strategy to promote healthy eating. Public health professionals in five European cities (Eindhoven, Horsens, Liverpool, Rennes and Valencia) decided to start a joint project trying to use the health promotion approach as an alternative strategy. This so-called SUPER project is analysed in this doctoral dissertation, because it could give many insights in the health promotion approach. The three main research questions are:

(1) Is the health promotion approach suitable for promoting healthy nutrition?
(2) What factors contribute to success or failure in developing a health promotion approach aimed at improving public nutrition?
(3) Is the knowledge gained by this multiple case study suitable for other cities and other topics?

The main objective of this doctoral dissertation is the development of strategies for facilitating processes of local, national and international collaboration in the field of nutrition. In The Netherlands the SUPER project was financially supported by the Dutch 'Praeventiefonds'. The European network is financially supported by the European Commission (BIOMED).

In chapter 1 the discussion focuses on existing strategies to promote healthy eating which have not been very successful. It is argued that the starting-points for health promotion are fundamentally different from health education. Health promotion uses a broader perspective, is more context specific, is partly unpredictable and requires flexibility for practice as well as for research. A basic principle of health promotion is a shift from interventions imposed from the 'top' to facilitation of an ongoing process, creating a physical and social environment which enables individuals to interact and gain more control over environmental factors and thus their own health.

In chapter 2 food consumption patterns, prevalence of nutrition related diseases and nutrition policy in the countries participating in the project are presented. The

countries can be divided in two comparable groups for general diet characteristics, diet related diseases as well as for the development of nutrition policy. The first group includes Denmark, the Netherlands and the United Kingdom, the second group includes Spain and France. The latter has a higher consumption of fruit and vegetables whereas the first group has a higher consumption of fat and sugar. There is also a clear gradient of coronary heart disease mortality across Europe ranging from high in the North to low in the South. Since the United Kingdom, Denmark and the Netherlands have higher rates of cardiovascular disease they have been more active in the field of developing nutrition policies. Slow development of nutrition policies in Spain and France is also related to the fact that the Spanish, and especially the French are very proud of their diet and are quite convinced that their diet is healthy. For a nutrition policy on a national level two factors seem to be important: (1) a sound supply of food stuffs and (2) promotion of healthy eating habits. The first factor is well taken care of in the five countries whereas the second leaves much to be desired. It seems desirable to find a better balance between the individual choice strategy and the structural change strategy.

The answer to the seemingly simple question 'why do individuals and population groups eat what they do?' is difficult because the choice of food involves a multitude of factors. As illustrated in chapter 3, various models of food choice have been proposed in the course of time. Some have emphasized internal motivation, other have concentrated on environmental factors. Food choice is discussed from several disciplines such as anthropology, social psychology, nutrition science and sensory research. Each of these theoretical insights, viewpoints and models have contributed to an understanding of the factors which shape food choices, at the same time leaving many questions unanswered. Furthermore, since food choice behaviour is a dynamic process these insights are constantly developing.

Without taking the broader context into account health education has been criticized as 'victim-blaming'. This led to a shift in thinking about health which is comparable to the shift in thinking in the field of agricultural extension. Many present-day viewpoints in this field are similar to those in the field of health promotion. This is described in chapter 4 and it is explained how this has resulted in the choice for the systems perspective. From this perspective, change in one sector usually implies that adjustments or responses also have to occur in other parts of the system. Not only change of individuals, but change of all actors in the food and health system is required. Community participation and intersectoral collaboration are perceived to be important elements of health promotion. A variety of interpretations of these concepts exists. The interpretation of these concepts has clear consequences for the choice of success factors. The more facilitative the approach becomes, the more one is interested in process indicators. For the SUPER project participation has been understood as active sharing of information among the different subsectors in the food and health system. Active sharing of information was viewed as an important prerequisite for facilitating change.

The use of the health promotion approach in the field of nutrition was new for all participating cities. A continuous learning process throughout the project resulted in redefining goals, research and philosophy with time. In chapter 5 and 6 it is shown how these learning experiences have influenced the project and research methodology. It is explained that action and research are strongly related and that the project was not designed to test hypotheses. Step by step actions have been taken, adapted and improved.

Chapter 5 describes the project methodology of the SUPER project. In each city two project areas were selected (a deprived area and a wealthy area). Intersectoral steering groups were set up consisting of people who worked and lived in the project areas, and who were able to plan nutrition promotion activities which were suitable for the local situation and which the local inhabitants believed to have a potential impact. The original idea behind the project was to organize activities in supermarkets, but the project broadened out to other settings such as health centres, schools, libraries and neighbourhood centres. The programme in each city was based on the same principles but differed in detail because of local and cultural differences.

Chapter 6 explains the research methodology of the SUPER project. During the development of the project it became clear that measuring a possible change in nutrition behaviour (a behaviourial endpoint) as a result of the activities, was an extremely complex undertaking. Furthermore, although the effect on nutritional behaviour is a valued outcome, collective work with the community on the issues related to nutrition can be seen as equally important. Studying participation processes and formative evaluation therefore achieved more emphasis after the first phase of the project. The effectiveness, feasibility and comparability of the project was evaluated in the course of three years. Research to guide and support the project was carried out on

(1) individual level (knowledge, attitudes, behaviour);
(2) environmental level (local possibilities to buy healthy food or to obtain information about healthy nutrition);
(3) community level (social networking, including the quality of participation from the different participants and conditions for cooperation); and
(4) the level of the project as a whole (incorporation in the structure).

Chapter 7 reports project development, implementation and evaluation of the project in Eindhoven. In chapter 8 the course of the projects in the other cities is described. Networks and the activities initiated in the five project cities have been incorporated into the local structures so that the health promotion approach in the field of nutrition has become a structural approach. Intersectoral collaboration resulted in complementary approaches including creating supportive environments, organizational change and social and individual development. The interactive character and the importance of linking to local possibilities have resulted in

independency of the projects, i.e. projects do not only rely on outside funding and outside human resources. Furthermore, practical tools for health promotion programmes have been developed. There has also been a positive change in environmental factors (both physical and social) which influence public nutrition. Examples of these changes are the willingness of supermarket managers to continue with activities, repetition of successful nutrition promotion activities in different community settings and schools paying more regular attention to nutrition education. Most importantly, the actors within the local nutrition and health systems are communicating with each other. Interest, curiosity and awareness has been created and those involved have experienced ways of working together effectively. By means of encounters and discussions, mutual dependencies have become clear, thereby creating possibilities for negotiation. Overall, the project was successful in establishing a sustainable basis for continuation and there is enough reason to believe that in the end individual behaviour will also change in the positive direction.

Chapter 9 details the results of the project as a whole. It is concluded that experiences of the five case studies taught that it is possible to stimulate and facilitate an ongoing process in the field of nutrition that creates a social foundation for improvements in health. Four success factors are mentioned:
(1) reflection and flexibility;
(2) cultural change;
(3) visibility and transparency; and
(4) the role of a community organizer.

Reanalysing the situation and reflecting on what had been successful or disappointing, appeared to be an important success factor for continuation. Cultural change refers to the learning process of both professionals as well as community members and their new role models. Visibility is important for four aspects of health promotion in practice:
(1) visibility of process and outcomes (output);
(2) visibility of activities (input);
(3) visibility of possibilities and contribution of the actors involved; and
(4) visibility of health promotion principles, procedures and approach.

All four function as incentives for action and continuation. A community organizer is important for facilitating the networking process itself.

Based on the results it is recommended that local, regional and national governments need to create situations in which actors of the food and health system recognize their interdependence and feel responsible for improving public nutrition. Educational material is necessary, but it is stressed that it is important to make more use of what is available and to try and improve connections to existing questions or questions which are raised through the interaction and participation process.

Samenvatting

In Europa bestaat er overeenstemming over het feit dat voeding onlosmakelijk verbonden is met de gezondheid van de mens. Tijdens de laatste halve eeuw zijn Westerse voedingspatronen uit balans geraakt. De Westerse voeding bevat te veel vet, suiker en zout en te weinig vezel. Het voedingspatroon dat bescherming biedt tegen hart- en vaatziekten, obesitas, diabetes mellitus en bepaalde vormen van kanker, is ook het beste voedingspatroon voor een goede algemene gezondheid. Het is bekend dat voedingsvoorlichting, of informatie overdracht, weinig effectief is om een gedragsverandering te realiseren. Voedselkeuze wordt bepaald door individuele, sociale, culturele, economische en omgevingsfactoren. Voedselkeuze is een complex gedrag. Informatie-overdracht alleen is onvoldoende om dit gedrag op een positieve manier te kunnen beïnvloeden. Gezondheidswerkers in vijf Europese steden (Eindhoven, Horsens, Liverpool, Rennes en Valencia) besloten daarom de gezondheidsbevorderings-strategie te gaan toepassen in een gezamenlijk project. Dit zogenaamde SUPER project wordt in dit proefschrift geanalyseerd. De drie belangrijkste onderzoeksvragen zijn:

(1) Is de gezondheidsbevorderings-strategie geschikt om een gezond voedingspatroon te bevorderen?
(2) Welke factoren leveren een bijdrage aan het succes of het falen van het ontwikkelen van een gezondheidsbevorderings-strategie die gericht is op het verbeteren van voedingsgedrag?
(3) Is de kennis die verzameld is in deze multiple case study geschikt voor andere steden en andere thema's?

Met dit proefschrift wordt beoogd strategieën te ontwikkelen die intersectorale samenwerking en participatie van de bevolking op het gebied van voeding kunnen ondersteunen. In Nederland werd het SUPER project financieel ondersteund door het Praeventiefonds. Het Europese netwerk wordt gesubsidieerd door de Europese Commissie (BIOMED).

In hoofdstuk 1 wordt beargumenteerd dat de traditionele voedingsvoorlichting niet veel heeft opgeleverd. Er wordt uitgelegd dat de uitgangspunten van gezondheidsbevordering wezenlijk verschillen van gezondheidsvoorlichting. Gezondheidsbevordering gaat uit van een breder perspectief, is meer context-specifiek, niet volledig voorspelbaar en vereist flexibiliteit in praktijk en onderzoek. Het vereist een verschuiving van de bovenaf opgelegde interventies naar het faciliteren van een doorgaand proces, waarbij een fysieke en sociale omgeving wordt gecreëerd die individuen de mogelijkheid geeft om meer greep te krijgen op de omgevingsfactoren en op die manier ook op hun eigen gezondheid.

Om voedingsbeleid te kunnen formuleren is het noodzakelijk om een goed inzicht te hebben in de bestaande voedselconsumptie-patronen van de bevolkingsgroep

waarvoor de plannen gemaakt worden. In hoofdstuk 2 worden bestaande voedselconsumptie-patronen van de landen die deelnemen aan het SUPER project besproken. Op basis van voedingsgewoonten, het vóórkomen van aan voeding gerelateerde ziekten en de ontwikkeling van voedingsbeleid kunnen de landen in twee groepen worden verdeeld. In de eerste groep zitten Denemarken, Nederland en Groot Brittannië. Hier is de consumptie van vet en suiker hoger dan in de tweede groep die Spanje en Frankrijk omvat. In deze laatste groep is de consumptie van groente en fruit hoger dan in de eerstgenoemde groep. Ook is er binnen Europa een duidelijke gradiënt in de sterfte aan hart- en vaatziekten waarneembaar. Deze sterfte is hoog in het noorden en laag in het zuiden. Omdat in Groot Brittannië, Denemarken en Nederland de sterfte aan hart- en vaatziekten hoger is, zijn deze landen actiever in het ontwikkelen van een voedingsbeleid. De langzame ontwikkeling van het voedingsbeleid in Spanje en Frankrijk houdt daarnaast verband met het feit dat vooral de Fransen, maar ook de Spanjaarden, erg trots zijn op hun voedingsgewoonten en ervan overtuigd zijn dat hun voedingspatroon gezond is. Voedingsbeleid op nationaal niveau kent twee belangrijke aspecten: enerzijds richt het zich op de zorg voor een goede voedselvoorziening en anderzijds op het bevorderen van goede voedingsgewoonten. In de vijf genoemde landen is er voldoende aandacht voor het eerste aspect, de uitwerking van het tweede is veel minder. Het zoeken naar een evenwicht tussen individuele keuzestrategieën en strategieën gericht op structurele veranderingen lijkt wenselijk.

De vraag 'waarom eten mensen en groepen wat ze eten?' lijkt op het eerste gezicht eenvoudig. Het geven van een antwoord is echter moeilijk, omdat voedselkeuze door een groot aantal factoren beïnvloed wordt. Zoals in hoofdstuk 3 beschreven wordt, zijn er door de jaren heen verschillende modellen ontwikkeld die de voedselkeuze verklaren. In sommige modellen vormt de interne motivatie de belangrijkste determinant van voedselkeuze, andere modellen leggen het accent op omgevingsfactoren. Voedselkeuze wordt vanuit diverse disciplines bestudeerd, zoals vanuit de antropologie, de sociale psychologie, de voedingswetenschap en het sensorisch onderzoek. De theorieën, inzichten en modellen die binnen elk van deze wetenschapsgebieden ontwikkeld zijn, hebben een bijdrage geleverd aan het begrijpen van de determinanten van voedselkeuze. Tegelijkertijd blijven veel vragen onbeantwoord. Bovendien zijn de theorieën over voedselkeuze constant in ontwikkeling, omdat voedselkeuze een dynamisch proces is en voortdurend verandert.

Toen de bredere context nog niet in beschouwing genomen werd, kreeg gezondheidsvoorlichting de kritiek dat zij 'victim-blaming' zou zijn. Deze kritiek leidde tot een verschuiving in de ideeën over gezondheid die vergelijkbaar is met de verschuiving die optrad in de landbouwvoorlichting. Veel van de huidige denkbeelden binnen de landbouwvoorlichting komen overeen met de denkbeelden van gezondheidsbevordering. Dit wordt geïllustreerd in hoofdstuk 4 en er wordt uitgelegd hoe dit uitmondde in een keuze voor het systeem-perspectief. Vanuit dit

perspectief gezien, zullen veranderingen die in één sector optreden, aanpassingen of reacties in andere sectoren van het systeem impliceren. Het doel van verandering betreft daarom in het algemeen het gehele systeem en niet slechts verandering van individuen. Participatie van de bevolking en intersectorale samenwerking worden als twee belangrijke elementen van gezondheidsbevordering gezien. Beide begrippen worden door gezondheidsvoorlichters op verschillende manieren geïnterpreteerd. Deze interpretatie heeft duidelijke consequenties voor de keuze van succesfactoren. Hoe meer de gekozen benadering een faciliterend karakter heeft, hoe meer de interesse uitgaat naar proces-indicatoren. In het SUPER project is het begrip participatie opgevat als actieve informatie-uitwisseling tussen de verschillende subsectoren in het voedsel- en gezondheidssysteem. Informatie-uitwisseling wordt gezien als een belangrijke vereiste om verandering mogelijk te maken.

Het toepassen van een gezondheidsbevorderings-strategie op het gebied van voeding was nieuw voor alle deelnemende steden. Het continue leerproces tijdens het project resulteerde in het herdefiniëren van doelen, onderzoek en denkwijzen. In hoofdstuk 5 en 6 wordt beschreven hoe deze leerprocessen het project en de onderzoekmethodieken hebben beïnvloed. Uitgelegd wordt dat actie en onderzoek sterk aan elkaar gerelateerd zijn en dat het project niet was opgezet met als doel hypothesen te toetsen. Stap voor stap zijn acties ondernomen, aangepast en verbeterd.

Hoofdstuk 5 beschrijft de opzet van het SUPER project. In elke stad zijn twee projectwijken geselecteerd (een achterstandswijk en een welvarende wijk). Er zijn intersectorale stuurgroepen opgericht bestaande uit mensen die wonen of werken in de projectwijken en die bereid zijn samen voedingsvoorlichtingsactiviteiten te organiseren. De activiteiten zijn aan de lokale situatie aangepast waarbij aan de mening van de wijkbewoners een belangrijke waarde is gehecht. Oorspronkelijk was het idee van het project om activiteiten in supermarkten te organiseren, maar het project werd verbreed naar andere plaatsen, zoals gezondheidscentra, scholen, bibliotheken en buurtcentra. In elke stad is het programma op dezelfde principes gebaseerd, maar verschillen de details vanwege lokale en culturele verschillen.

Hoofdstuk 6 beschrijft de onderzoeksmethoden die in het SUPER project gebruikt zijn. Tijdens de ontwikkeling van het project is duidelijk dat het meten van een mogelijke verandering in voedingsgedrag als gevolg van de activiteiten, een zeer complexe aangelegenheid is. Hoewel een positieve invloed op het voedingsgedrag een waardevolle uitkomst is, kan samenwerking met de lokale bevolking rondom het thema voeding als even belangrijk beschouwd worden. Na de eerste fase van het project kreeg het bestuderen van participatie-processen en procesevaluatie daarom meer nadruk. Gedurende drie jaar is de effectiviteit, de uitvoerbaarheid en de

vergelijkbaarheid van het project onderzocht. Om het project te begeleiden en te ondersteunen is op vier niveaus onderzoek uitgevoerd:

(1) op individueel niveau (kennis, houding en gedrag);
(2) op omgevingsniveau (lokale mogelijkheden om gezond voedsel te kopen of om informatie over gezonde voeding te verkrijgen);
(3) op community-niveau (sociale netwerken, met daarbij aandacht voor de kwaliteit van de participatie door verschillende deelnemers en aandacht voor de voorwaarden om samen te werken); en
(4) op niveau van het gehele project (inbedden in de structuur).

Hoofdstuk 7 beschrijft de ontwikkeling, de implementatie en evaluatie van het project in Eindhoven. In hoofdstuk 8 is het verloop van de projecten in de andere steden beschreven. Netwerken en activiteiten die in het kader van het project in de vijf projectsteden geïnitieerd werden, zijn ingebed in lokale structuren. Op die manier is de gezondheidsbevorderingsstrategie op voedingsgebied een structurele strategie geworden. Intersectorale samenwerking had aanvullende strategieën tot gevolg zoals het scheppen van een omgeving die ondersteuning biedt, het optreden van veranderingen in organisaties en het initiëren van sociale en individuele ontwikkelingen. Het interactieve karakter van het project en de aansluiting bij lokale mogelijkheden hebben geresulteerd in onafhankelijkheid van de projecten. Dat betekent dat de projecten niet afhankelijk zijn van externe financiering of van externe inzet van personeel. Daarnaast zijn er praktische instrumenten voor gezondheidsbevordering ontwikkeld. Ook is er een positieve verandering opgetreden in de fysieke en sociale omgevingsfactoren die de voeding van de bevolking beïnvloeden. Voorbeelden van deze veranderingen zijn de bereidwilligheid van supermarktmanagers om de activiteiten te continueren, de herhaling van succesvolle voedingsvoorlichtingsactiviteiten op verschillende plaatsen in de wijken en de meer reguliere aandacht voor voeding binnen het onderwijs op scholen. Maar de belangrijkste verandering is dat de actoren binnen de lokale voedings- en gezondheidssystemen nu met elkaar communiceren. Interesse, nieuwsgierigheid en bewustzijn zijn opgewekt en de betrokkenen hebben ervaren hoe ze op een effectieve manier kunnen samenwerken. Door ontmoetingen en discussies is de onderlinge afhankelijkheid duidelijk geworden, waarbij mogelijkheden om te onderhandelen zijn gecreëerd. Over het geheel was het project succesvol in het scheppen van een sociale basis, zodat het project gecontinueerd kan worden en is er voldoende reden om aan te nemen dat uiteindelijk ook individueel gedrag in een positieve richting zal veranderen.

Hoofdstuk 9 beschrijft het project in zijn geheel. Er wordt geconcludeerd, dat de ervaringen van de vijf case studies aantonen, dat het mogelijk is om op het gebied

van de voeding een sociaal proces op gang te brengen ter bevordering van de gezondheid. Vier succesfactoren worden genoemd:

(1) reflectie en flexibiliteit;
(2) cultuurveranderingen;
(3) zichtbaarheid en openheid; en
(4) de rol van een lokale coördinator.

Het analyseren van de situatie en het reflecteren op de successen en teleurstellingen blijkt een belangrijk element voor het vervolg te zijn. Cultuurveranderingen verwijzen naar het leerproces van zowel beroepskrachten als bewoners en hun nieuwe rolmodellen. Zichtbaarheid is belangrijk voor vier aspecten van gezondheidsbevordering in de praktijk:

(1) zichtbaarheid van het proces en de resultaten (output);
(2) zichtbaarheid van de activiteiten (input);
(3) zichtbaarheid van de mogelijkheden en inbreng van de betrokkenen; en
(4) zichtbaarheid van de principes, methoden en strategieën van gezondheidsbevordering.

Alle vier de aspecten functioneren als prikkels voor actie en continuering. Een lokale coördinator is belangrijk om het netwerkproces te faciliteren.

Gebaseerd op de resultaten wordt aanbevolen dat lokale, regionale en nationale overheden situaties moeten creëren waarin de actoren binnen het voedings- en gezondheidssysteem hun onderlinge afhankelijkheid erkennen en waarin zij zich verantwoordelijk voelen voor het verbeteren van de voeding van de bevolking. Voorlichtingsmateriaal is noodzakelijk, maar benadrukt wordt dat het belangrijk is om meer gebruik te maken van bestaand materiaal en om beter aan te sluiten bij vragen die naar aanleiding van het interactie- en participatieproces naar voren komen.

Curriculum Vitae

Lenneke (Helena Wilhelmina) Vaandrager was born in Zuidlaren, The Netherlands, on February 5th, 1965. Until the age of ten, she lived in Gabon and Kenya. In 1983, she completed Athenaeum B at the Rijnlands Lyceum in Oegstgeest. In August 1989, she obtained her MSc degree in Human Nutrition at the Wageningen Agricultural University. Her main topics were food consumption studies, marketing research, consumer behaviour and health promotion. As a part of her degree she spent 4 months in Turku, Finland and 5 months in Liverpool, England. During her studies she was an active member of a student club.

From October 1989 to May 1990 she was invited by The Valencian Institute of Studies in Public Health (IVESP) in Spain, to carry out research in the field of health promotion and nutrition. The following five months she worked as a researcher at the University of Liverpool, Department of Public Health in England. Her task was to set up an European food and shopping research project in five countries (The SUPER project). From September 1990 until May 1991 she worked as a research assistant at the Department of Communication and Innovation Studies of the Agricultural University of Wageningen, The Netherlands. She assisted at lectures and carried out an evaluation research on how employees of an Institute in Wageningen experienced the consequences of a reorganization.

In July 1991, she received a research grant from the Dutch Praeventie Fonds for the Dutch part of the SUPER project and for co-ordination of the project on a European level. Since that time she has been a researcher in the field of health promotion and participatory approaches at the Department of Communication and Innovation Studies. The SUPER project has been accepted as a MCAP (Multi-City-Action-Plan) nutrition of the 'Healthy Cities' project of the World Health Organisation and as a Concerted Action within the EEC BIOMED programme. Eight European cities are now involved: Eindhoven (The Netherlands), Valencia (Spain), Rennes (France), Liverpool (England), Horsens (Denmark), Amadora (Portugal), Cagliari (Italy) and Charleroi (Belgium). She has organized and chaired the yearly business meetings and she has yearly visited the project cities to discuss progress and strategies. Besides research, she has trained and lectured undergraduates and master students (in Wageningen, Liverpool and Valencia) in the field of health promotion and participatory research methodology.

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ANNEX I Statements used for the evaluation of supermarket activities

Knowledge

- I think the risks of a fatty diet are not so bad.
- Fish largely contains the type of fat which is better for the heart and the blood vessels.
- A slice of gingerbread contains less fat than a slice of cake.
- 100 gr of chicken breast contains more fat than 100 gr of mince.
- You had better eat bottled or tinned vegeTables than no vegeTables at all.
- Cod contains a lot of fat.
- Pulses are low-fibre.
- Minced beef is less fat than beef & pork mince.
- Once a week a meal without meat cannot do any harm.

Beliefs

- I discuss my nutrition habits a lot with friends and family.
- I am interested in healthy food.
- I think the risks of a fatty diet are not so bad.
- I do not appreciate lean products as much as I do fat products.
- Nutrition education is instructive.
- I am able to influence my own health.
- By eating less fat, I feel better.
- I would like to have more information about low-fat cooking methods.
- I find it hard to eat healthy.
- I pay attention to the fat content of foodstuffs I buy.

ANNEX II Food consumption in AB and KB in 1991 and 1993

TABLE 1
Average consumption of food items/week in AB of which amount consumed was different between 1991 and 1993 (paired t-test, N=186)

Food item	unit	1991	1993	t-value	p	df
skimmed milk	glass	2.6	5.5	5.20	0.000	185
full fat yogurt	a bowl	1.3	0.8	-2.79	0.006	185
skimmed yoghurt	a bowl	3.3	2.5	-3.08	0.002	185
chips & fried potatoes	serving spoon	2.4	2.8	2.79	0.006	184
pulses	serving spoon	0.9	1.4	2.63	0.009	185
tinned vegeTables	serving spoon	2.3	1.8	-2.36	0.019	185
mayonnaise	Table spoon	1.4	1.8	2.11	0.036	185
chicken	100 gram	0.9	1.1	2.36	0.019	185
biscuits	a piece	2.0	1.5	-2.37	0.019	185
snacks	a piece	0.9	0.7	-2.06	0.041	185

TABLE 2
Average consumption of food items/week in KB of which amount consumed was different between 1991 and 1993 (paired t-test, N=110)

Food item	unit	1991	1993	t-value	p	df
skimmed milk	glass	2.1	5.2	4.57	0.000	109
fresh & frozen vegeTables	serving spoon	11.1	12.9	2.34	0.021	108
biscuits	piece	2.3	1.1	-2.56	0.012	109