# THE IMAGE OF AGRICULTURE IN TWO CISKEIAN COMMUNITIES

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# P R E F A C E

## EXPLANATORY NOTE

Field sizes throughout the thesis are given in morgen because the original allocation of the fields was made in this unit. In addition, those allocated the fields, speak only of morgen and the conversion (1 morgen = 0,857 hectare) is clumsy.

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# CHAPTER 1

## I N T R O D U C T I O N

Agriculture is a complex cultural institution. This is particularly the case when studying subsistence conditions in a tribal system, because aspects requiring investigation include social, religious, political and economic factors (Dalton, 1967). These factors represent an extremely broad sphere of inquiry and the large number of relevant aspects has been the cause of problems plaguing attempts to develop subsistence agriculture (Grigg, 1973).

The purpose of this study is to outline an environmental perception approach to agriculture and explore the contribution that the approach could make to agricultural improvement. As such it represents a pilot study which attempts to introduce behavioural science research into agricultural development. Foster (et al) (1965) outline three research foci in this respect; the socio-cultural-psychological system of the recipient people (farmers), the system of the innovating organization, and the interaction of the two. This study deals with the first focus outlined by Foster, and aims to make a statement about the image that two semi-subsistence communities have of their agricultural system. In other words, how their agricultural system *appears* to them.

The degree to which the purpose is achieved will be influenced by the following restrictions imposed on the research. Firstly, this investigation into agriculture formed part of a larger survey which meant that severe limitations were placed on the length of the questionnaire and sometimes the form of the questions themselves. Secondly the lack of detailed data for the two communities in question made it difficult

to test responses fully. Thirdly, a perception study is seldom complete in itself because important factors affecting agriculture may lie outside the perception of the people themselves.

The perceptions of people (of agriculture in this context) remain important despite the above problems associated with arriving at perceived images. The following are some of the reasons:

(i) Development theory and policies have, up to the present, been unable to alleviate the population and food crisis (Borgstrom, 1973). New attempts to enter the development arena are therefore appropriate.

(ii) Environmental perception clarifies the fundamental issue of how man interacts with his environment. While the determinism - possibilism - probabilism debate is not over (Harvey, 1969), environmental perception identifies the image as the interface between man and the environment, and the image is also considered the 'decoder' of the environment to man (English, 1968).

(iii) Most particularly, ascertaining the image of the people reveals the basis of their attitudes and actions, and facilitates the input of relevant information to initiate change.

The environmental perception approach to agriculture was applied to two rural communities in the Ciskei. The Ciskei is one of ten homelands designated to a specific group of the black population and has been granted local power and legislative assembly. This measure of autonomy and the economic conditions prevailing in the territory make it resemble conditions faced by developing counties. To illustrate the

development problems of the Ciskei, a general description of economic conditions will be undertaken. A full scale economic analysis is not envisaged. Instead, certain selected aspects linked to agriculture will be dealt with to show that agriculture is an important focus in itself. The major areas that will be outlined include population problems, economic structure and income, industry and urbanization, agricultural yields and, finally, the policy of the agricultural extension service.

The population pressure in the Ciskei is great, despite the fact that in 1970, 529 635 people, only 55,9% of the population, lived in the Ciskei. The population density, calculated from Benbo (1975) from 1970 population figures, was 1 person per 1,5 ha. The seriousness of the situation is increased because 80,5% of the black population of the Ciskei is rural and, therefore, depends largely on cultivable fields for its existence. The distribution of the population also deserves attention. The number of economically active males absent from the Ciskei totalled 149 000 in 1970, 37 200 absent temporarily and 111 800 permanently (Lombard and Van der Merwe, 1972). The resultant unfavourable age and sex ratio of the population has been cited as an important reason for the stagnant economies of the homelands (Butler et al, 1977), of which the Ciskei is no exception. Lombard and Van der Merwe also estimate that the annual increase of the male labour force is about 113 000 and state that 5 000 new employment opportunities have to be created within the Ciskei annually to meet the demand. Population pressure was also felt in the two communities under investigation because preliminary excursions into these areas, before the survey, revealed that approximately one third of the residents had not been allocated fields.

Structurally, agriculture plays a large role in the economy of the Ciskei because it contributes 31,3% of the G.D.P. The equivalent figures for the private and public sectors are 19,4 and 49,3% respectively for 1971/72. This mirrors a classic example of an underdeveloped economy (Grigg, 1973).

Incomes from the rural sector are low in absolute terms. Using 1970 data to calculate the per capita earnings from farming (i.e. plant and animal production and forestry) it is found that the figure is R11,40, while the equivalent figure for the de facto population as a whole was R61,70. In addition, income from migrant workers and daily commuters working in white areas, accounted for over 70% of the total income of de facto black residents (Benbo, 1975). Because of the low incomes of the agricultural sector, capital is not able to be generated and at the same time credit facilities for farmers are not widely available.

Urbanization and its generally recognized corollary, the provision of employment opportunities, is also inadequate. By 1970 there were only six towns accommodating a total of 173 555 people. Although the Border Industries employed 19 824 Xhosas from the Ciskei, enterprises in the Ciskei proper fall far short of the demand. For example, enterprises established on an agency basis within the Ciskei in 1970 employed a total of 90 people only (Benbo, 1975). The rate of industrialization is also slow. As early as 1955 recommendations were made to the Union government to promote industrial activity within the homelands (Govt. Printer, 1955). By 1975 no recognized growth points had been developed, although two areas totalling 27 ha have been started at Dimbaza and Sada (Benbo, 1975).

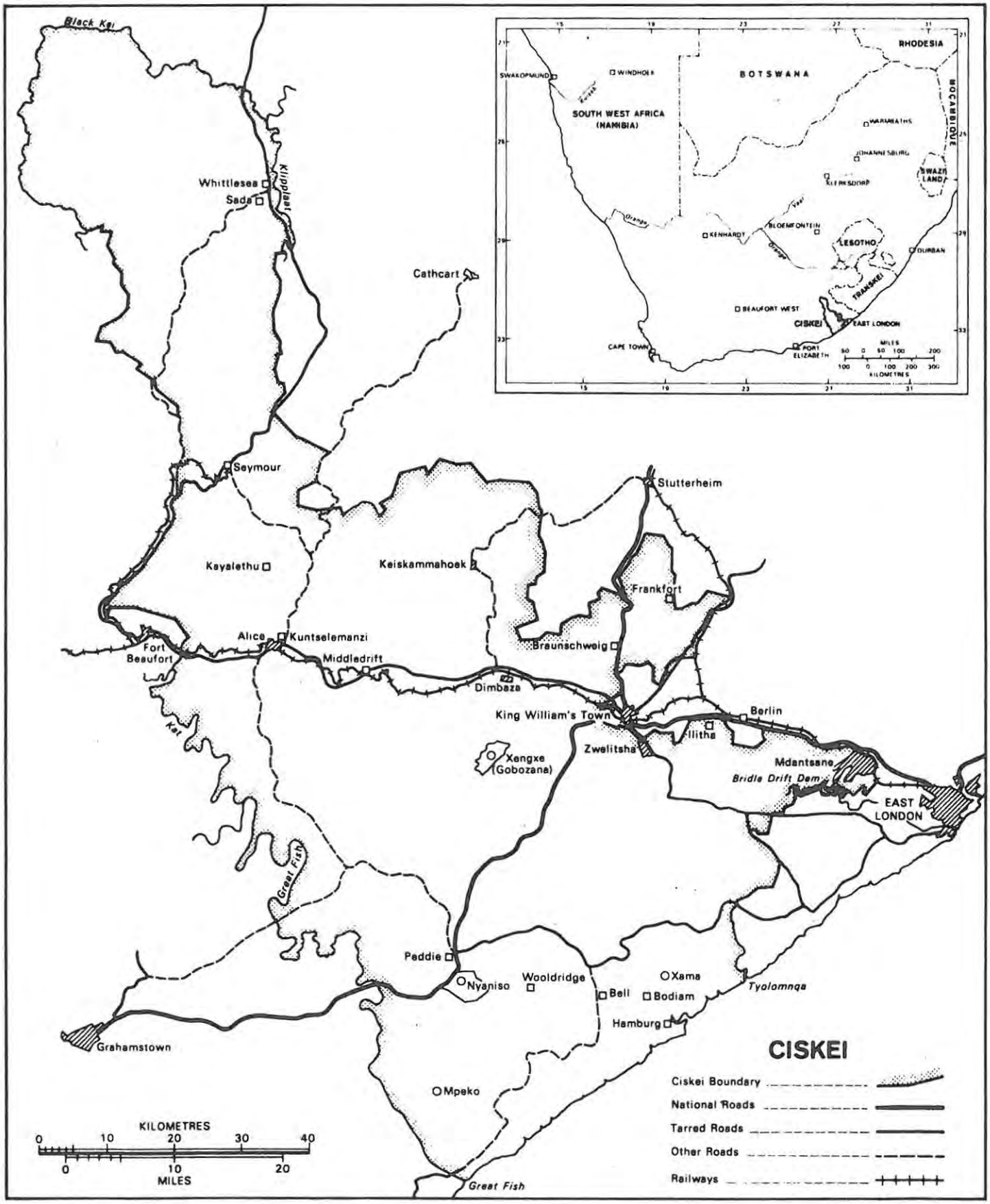



FIGURE 1.1. The Ciskei

The high proportion of people classified as rural, the large contribution of agriculture to the G.D.P. and the slow rate of urbanization and industrialization leads one to consider the necessity of investigating agricultural problems so that the welfare of the people might be improved. Furthermore, the focus of this study on agriculture can be justified by the fact that it is considered basic to the development process by a number of authors. Dumont (1967) sees agricultural development as a necessary prerequisite for economic development as a whole. Other writers stress the fact that industrialization occurs in isolated development islands (Green and Fair, 1962; De Wilde, 1967; Myrdal, 1968), leaving large numbers of people in rural areas dependent on agriculture for subsistence.

At the most basic level of yields and output, the agricultural sector of the Ciskei performs poorly. The average dry land maize yield per ha in the Ciskei for 1970 was 1,4 bags while the equivalent in the Transvaal, highveld and the Western Transvaal was 25,2 and 18 bags respectively. The Ciskeian yields were also the second lowest in comparison to the other homelands (Black Homelands of South Africa, 1976). Bearing the low yields in mind, it would be instructive to outline the development policy of the Department of Bantu Administration and Development.

According to Hamburger (1970), the development policies and strategies are based on the recommendations of the Tomlinson Commission (Government Printer, 1955). The Commission recommended;

(i) that the land be stabilised,

(ii) that the land be resettled,

(iii) how the stabilised land should be utilized,

(iv) details of marketing of products, and

(v) the provision of credit.

Two aspects have received the most attention: stabilization of land and the planning of settlements. In fact, this preoccupation with the purely physical aspects of development, rehabilitating areas, consolidating arable areas, the demarcating residential and grazing areas, has overshadowed the basic concept on which the entire range of development proposals were made. This concept was the family economic unit which was hoped would form the basis from which the Africans could develop as a class of full-time farmers. The family economic unit was based on a gross income of R120 per annum at current prices in the fifties and full economic units, only taking cultivable fields into account, were between 6 and 9 morgen (Houghton, 1964). The Commission realized that the land shortage would probably exclude a number of people, but stated that farm units should not be less than 2 morgen of arable land. The situation faced at present is that "... to only about 10% of the families in the Ciskei was it possible to allocate such an economic unit - the majority of the people eke out an existence on 1 morgen or even less" (Sebe, 1974, pp.5-6).

From the brief consideration of economic factors, agriculture is seen as an important sector, yet a sector which performs poorly. Furthermore, there is a lack of research and policy implementation dealing with social and psychological elements in relation to development (Butler et al, 1977), a fact recognized by the Tomlinson Commission as early as 1955. It is to this area, the socio-cultural-psychological, that this study is directed in the hope that "Subsistence farmers be encouraged and helped

in making their farms less and less subsistence, and more and more commercial," (Mosher, 1970, p.7).

The structure of the study concerns itself first of all with an outline of perception literature in Human Geography, the research focus and the method of analysis. The analysis, itself, and discussion of the findings conclude the investigation.

# CHAPTER 2

## PERCEPTION LITERATURE IN HUMAN GEOGRAPHY

Perception has traditionally been the domain of the psychologist with numerous theories and explanations emanating from different schools of thought within the discipline (Allport, 1955). These perceptual aspects have filtered through to the other social sciences including Geography where they have strongly influenced both fields and methods of inquiry. Two major approaches emerge (Saarinen, 1966). Work done by psychophysicists tends to deal primarily with the ability, scope and limitations of the sense organs, while the social psychologists on the other hand concentrate on the complexity of the individual as a social being. The latter group (the most appropriate to this study) favour either Gestalt or stimulus response theory and recognize that learning and motivation enter into perception together with any other stimuli that happen to be present.

According to Allport (1955) the basic assumptions of Gestalt theory are derived from Phenomenology which consists of describing an 'awareness', or 'how the object looks'. This is done by recourse to introspection and not by any objective external measurement. The desired result is a description of how the phenomenon *appears* to the individual. The most important basic assumption of Gestalt theory asserts that the 'whole' is more than just a sum of the parts, and that the 'whole' possesses a unifying quality and meaning. If agriculture is taken as an example, it represents more than just a composition of soils, seeds, ploughing, education and other factors; it takes on a definite meaning for a community - whether agriculture is equated with the 'good life' or whether

it is a necessary evil that has to be endured in order to survive. Although certain assumptions of Gestalt theory have been criticized (Allport, 1955), Lewin's (1936) modification of Gestalt ideas which led to the development of the Field Theory, is generally accepted by geographers. Basic to the Field Theory is a concern with 'life space' which refers to the incorporation of both physical and psychological environments in influencing behaviour (Koroscil, 1971). The psychological environment is considered as both the interface between man and the environment as well as the major interpreter of the environment to man (English, 1968).

Traditional stimulus-response theory, on the other hand, stresses a relationship between stimulus and response which is strengthened through repetition accompanied by reinforcement. According to Koroscil (1971), initial dissatisfaction with the theory lay in its bias towards objectively observed data and viewing perception merely as a reaction to the stimulus. Another criticism was that experiments were performed on lower animals and behaviourists questioned that man operated according to set,primary laws. In addition, since the response was considered to be the perception, any sense of awareness or reason was played down. This concept can be illustrated by applying it to a flood zone where in traditional stimulus response terms the reaction of the people to the flood constitutes their perception. This view is criticized because it represents an over-simplification of what actually happens - people do not react automatically, because, between the flood and the evacuation, for example, a number of things take place in the mind of the individual. It is in the mind that attitudes, prejudices and fears are conceived and it is suggested that it is in this mental context

that the perception is formed. The reaction is merely the concrete result of the perception. To use the example of the flood again, the evaluation is the physical result of a perception that considers the flood to be dangerous. Subsequent modifications of the basic theory which incorporate behavioural elements have led to a wider acceptance of the approach.

Perception studies have proliferated in geography (Wood, 1970) and rely on both Gestalt and stimulus-response branches. Studies concentrating on the appearance and meaning of the environment tend to favour the Gestalt approach, while work on natural hazards, dealing with reactions to and behaviour associated with flooding, for example, build on stimulus-response concepts. Variations in scope, aims, method and subject matter in perception studies in geography make it necessary to attempt a classification of the works as outlined in Figure 2.1

The works that are considered in this review are not exhaustive and the classification should rather be seen as an attempt to show the evolution of the concepts of perception in geography and to point to some major trends in this field. In this way it is hoped that some order might be imposed on the diversity of perception studies while simultaneously surveying the literature.

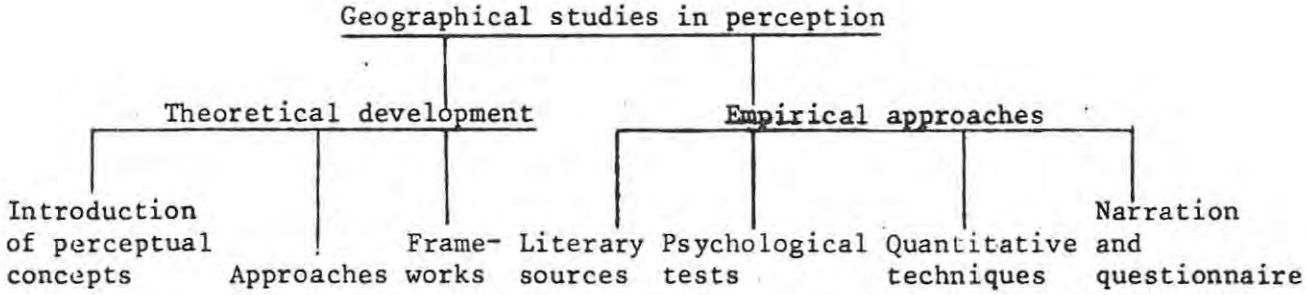



FIGURE 2.1. Classification of Perception Literature in Geography

## 2.1 THEORETICAL DEVELOPMENT

In discussing the theoretical development, the three headings (Fig. 2.1) chosen, represent distinct stages in the evolution of the theory beginning with broad general statements and ending in the development of frameworks which try to model man's interaction with the environment. A specific approach is also followed within each section - the first, dealing with the introduction of perceptual concepts, is a developmental approach; the second approach treats works concerned with two major points of view, those dealing with the complexity of man, and those whose focus is on the environment. Finally the frameworks are evaluated in terms of their capacity to explain the interaction and identification of the various elements in the man/environment relationship.

### 2.1.1 Introduction of Perceptual Concepts

Initial sorties into the theory of perception by geographers were made as early as 1947 when Wright's focus was concerned with the unknowns of 'contemporary geographical science' and the part that imagination had to play in that sphere. This work together with those of Lowenthal (1961), Darby (1962) and Kirk (1963) deals with the theory of geographical knowledge, and more particularly, the use of the imagination to discover what is beyond the realm of geographical knowledge. Imagination is seen as the means by which mental images or perceptions are built when dealing with research in new areas of enquiry.

Wright (1947) deals with the role of imagination in geographical inquiry and implicit in his statements regarding the varieties of

*Terrae Incognitae* is the fact that these Terrae Incognitae are a result of personal and cultural factors. Even particular civilizations are said to influence perception. He attempts to show in the use of imagination (or perception), that an inherent subjective element is not necessarily a drawback because much of the world's accumulated wisdom has "... been acquired, not from the rigorous application of scientific research, but through skilful intuitive imagining - or insight - of philosophers, prophets, statesmen, artists and scientists" (Wright, 1947, 6). In defence of the use of imagination, Wright discusses two types of subjectivity - promotional and intuitive. Promotional subjectivity is said to incorporate biases and lead to descriptive conclusions which may frequently be invalid, while intuitive subjectivity of the type advocated by Wright is considered to provide "secure realistic conceptions". A similar conclusion is reached by Watson (1975, 273): "... although images may be subjective and parochial, this does not mean that they cannot enter into objective and general assessments."

The concern of Lowenthal (1961) is not so much the advance of geographical enquiry by perceptive thinking, but the physical, human, cultural and personal nature of man in relation to the total environment. The discussion of this article will concentrate on these few points. Drawing from psychological literature, Lowenthal introduced the idea of universal world views. The fact that life functions in a reasonably ordered way, that most public knowledge can be verified and that a large part of acquired knowledge is taken on faith, all point to some general agreement about the nature

of the world. Coupled with this, he also drew attention to the dynamic nature of the world by stating that "... not only is the earth itself in constant flux, but every generation finds new facts and concepts to deal with." (p.245). He also stressed that world views are almost always anthropocentric for, "... we inevitably see the world from a human point of view ..." (p.246). Despite a certain amount of universality of world views, these are also shown to differ at various levels, for example, the cultural, language and personal levels. Another contribution that Lowenthal has made through his article is that a certain amount of uniformity of perception is observable at the cultural level. His contention that cultural perceptions play vitally important roles in the man/environment relationship is backed up by numerous examples such as orientation, territoriality and language. Examples of orientation include maps of the Eskimos who detail the bends in the rivers while neglecting linear distances, as well as the Unkchee of Siberia who have twenty-two compass directions. Language is an element of perception that does not always correspond with cultural boundaries as it is the mechanismwhich directs a certain world view, but "... also adjusts to the world view" (Lowenthal, 1961, 254). Although cultural perceptions have been found to be important explanatory variables by Tuan (1968), Lowenthal asserts that individuals within the same culture perceive and structure their worlds differently. By stressing the complexity, uniqueness and limitations of 'personal geographies', and the degree to which private worlds correspond with reality, he shows that the perception of the real world does not automatically correspond with the real world as it is. The discrepancy is a result of numerous factors inherent in our make-up,

ignorance, imagination and distortion (Lowenthal, 1961) to which other factors of past experience, present milieu and personality have more recently been added (Saarinen, 1966; Pocock, 1973). Therefore the reality exists that "... each man's appraisal of an identical situation is his own." (Clark, 1950, 20).

In the light of Lowenthal's evidence,a comprehensive study of geography requires us to perceive facts in different areas, cultures and regions - an extremely difficult task because of the complex factors that make up our own perceptions as well as the perceptions of those we study. Our descriptions and explanations, therefore, remain partial (Lowenthal, 1961). This last statement by Lowenthal is perhaps the most important contribution of his paper, for by focusing on the partiality of explanation it makes the geographer aware of limitations of various theories and constantly forces him to evaluate the claims of the theory. Dogmatic clinging to an obsolete or an inappropriate theory should thus be adverted.

The problem of description and explanation as a result of an individual or cultural perception regarding previous events, attitudes and other cultures is treated explicitly by Darby (1962). In an attempt to offer practical solutions he mentions various descriptive and explanatory techniques such as sequent occupance, introductory narrative and retrospective reference. He does not analyse the techniques in any depth, but merely states that the type of description used will be dependent on the purpose of the investigation. Darby focuses throughout on the landscape and its elements,

but explanations of man's role in perceiving and changing the landscape are not emphasised.

In contrast Kirk (1963) introduced the concept of the behavioural environment. In his discussion on the problems of geography, Kirk differentiates between the phenomenal (physical) and the behavioural environments, and stresses that both environments make up the true field of the geographical environment. The two environments are not seen as isolated but as interacting "... the facts of the phenomenal environment will enter the behavioural environment of man, but only insofar as they are perceived by human beings with motives, preferences, modes of thinking and traditions drawn from their social, cultural context." (Kirk, 1963, 366). This statement acquires greater significance when seen in the light of later works (Downs, 1970; Pocock, 1973) which show that information from the real world is incorporated into the image and that action takes place on the basis of the image, but works itself out in the real world. Of significance is the corollary that "Facts which exist in the phenomenal environment ... which do not enter into the behavioural environment of a society have no relevance to rational spatial behaviour and consequently do not enter into the problems of the geographical environment." (Kirk, 1963, 367). Other general statements on perception are mentioned by Kirk, including for example, that perceptions of a single place are different to different people, but the noteworthy aspect is Kirk's attempt to draw up a conceptual model of the relationships between the phenomenal and behavioural environments. This model, although very general, does clarify links between the environments and thus contains some degree of explanation.

The articles above all introduce the human element in geographical research, whether in the form of human sensory limitations, or personal and cultural world views or the behavioural environment. The importance of their contribution lies in the recognition that the complex nature of man is as significant in the collection of geographical facts as the earth's surface itself. As a result of these works, geographers have been reminded that they cannot know exhaustively and objectively because all knowledge is chanelled through complex human, cultural and personal filters causing certain things to be perceived in certain ways.

### 2.1.2 Approaches

Theoretical works deal more specifically with perception as expressed in man's view of the environment (Wood, 1970). The works build on the concepts outlined previously but are concerned not so much with sensory environmental perception as the symbolic characteristics assigned to basic facts of the environment by man. These symbolic characteristics are a result of man's indirect relationship to the environment caused by a separating 'black box' (culture) which needs to be examined and explained (English, 1968). Culture is itself intangible and two major themes are observable: culture as manifest in the behaviour and attitudes of man, and secondly the way in which culture works itself out in the environment. The studies in this section will be discussed in terms of these two themes.

The complexity of man, individually and as a group lies in the factors that cause the real environment to be subordinated to a mental model of it. This subordination is a result of numerous

factors which have already been mentioned, but which can bear brief repetition. History, mood, purpose, faith and custom could explain behaviour in the environment. Despite the fact that personal histories and experiences are not traditionally the field of geography, understanding of thought and feeling are essential to the comprehension of man/environment relationships. This is because "... subjective, often unconscious and mentally dominated forces play a major role in how we see the environment and act in it; and that scientific interpretations of the universe are only partial models of more complex structures that individuals sense and interpret." (Lowenthal, 1967, 1).

English (1968) further illustrated the complexity of the situation by viewing man as a decision-maker in the man/environment relationship. His statements, that decisions are based on distorted mental models of the real environment and that the physical outworkings of these decisions take place in the real environment, introduce a double distortion. Not only does one have the initial modification of the real world in the image of it, but also the problem of meshing behaviour with the image and the real word. The task of attempting to recognize the factors that influence the formation of the image, and the relationships between the image, behaviour and real world when the decision is taken, is difficult. Yet it is necessary for the development of viable decision-making theory, because claims that decisions are based on rationality have been severely questioned (Horton and Reynolds, 1969). English (1968) offers no means of analyzing or ordering the complexities in the decision-making process, but his contribution lies in

exposing another area of the multifaceted problem, namely the double distortion mentioned above.

Exploring the decision-maker concept in more detail, Sonnenfeld (1969) in his paper on environmental personality suggests that the differences in decision-making and tendencies to behave in a certain way, are closely related to personality. Thus the "... psychological environment is made up of ... a set of attitudes and expectations and predispositions to behave which are a function of the individual's personality." (Sonnenfeld, 1969, 137). Using four categories of personality viz., sensitivity, mobility, control over the environment and risk taking, Sonnenfeld attempted to show that these differed from groups of people determined by age, sex, education, environmental experience, residence, occupation and marital status. While the results tended to be positive, the four personality traits used to explain the motivations and prejudices which are brought into play in decision-making, need refining because of possible oversimplification.

Another approach to environmental perception which stresses the role of man is the use of learning theory. Tuan (1972) maintains that perception as a result of cultural and personal stimuli is learnt, and by concentrating on developmental psychology and the accompanying modes of learning (experience, imitation and instruction) perception will be better understood. An advantage of this approach is that it provides a possible explanation for the dynamic nature of images. A change in image may therefore be regarded as a result of increased knowledge or learning about the environment. If the example of the flood is repeated, it means that the initial

reaction to the flood might be very different to the reaction after a number of floods have been experienced. Evacuation may after a time be replaced by more rational planning that could offset the worst effects of the flood. The subsequent reaction according to Tuan would be as a result of increased learning about the nature and extent of the flood. The image would thus have changed from one of helplessness to one of hope. Since most images are dynamic, Tuan's contribution is important.

Approaches stressing world views (Saarinen, 1970), socialization (Eyles, 1971) and institutions (Rorabacher, 1973) also contribute insights on the view that individuals and groups have of the environment. Saarinen (1970) offered no details of his ideas of the total world view, while Eyles (1971) merely suggests that social position has a large part to play in constituting a particular image. Socio-cultural 'institutions' according to Rorabacher (1973) are responsible for the stimulation of 'major behavioural patterns throughout history'. Examples of 'institutions' are legal, economic, political and educational systems, religion, philosophy and aesthetics, as well as science and technology. These institutions, Rorabacher suggests, may provide a conceptual tool to establish the environmental perception of various societies and a universal method of approach to perception studies.

Singling out various facets such as personality, decision-making, learning theory and socialization, or advocating the institutional approach are all attempts to come to terms with the complexity of man in relation to his environment. Another basic approach is one which analyses the landscape and attempts to reconstruct the

image and is also widely adopted particularly in studies of historical and cultural geography.

Analysis of the landscape deals with more than the external, physical landscape because the "... full answer can no longer be sought in the external world, because motives, attitudes, preferences and prejudices must be examined as well as works and deeds." (Prince, 1971, 24). Various techniques by which a composite picture of the times may be assembled, include map interpretation, translating dead languages and probing the meanings of words which now lack the same association of ideas (Prince, 1971). Such an environmentally orientated approach does assist the researcher in developing a realistic perception of the culture but does not necessarily provide insight into the perception that people themselves had of their environment.

Sonnenfeld (1972, 246) attempts to define the environment in behavioural terms because the traditional, physical/social distinctions "... are irrelevant within the context of behaviour ...". His classification consists of a nested set of four environments - the geographical, operational, perceptual and behavioural. The geographical environment is considered the most general as it consists of objective elements as well as aspects that do not exist for the individual, e.g. equatorial forests for the Eskimo. The remaining three environments represent a narrowing in scope until reaching the environment which elicits a behavioural response. While there is need to distinguish parts of the environment which do and do not elicit a reaction (Sonnenfeld, 1972), the problem of classifying the elements that are significant and those that are

not, remains serious.

A basic factor important to both perception and behaviour in the environment is the organization of space (Beck, 1967; Murton, 1972). Physical and interpersonal properties are considered to be organized spatially in such a way as to convey symbolic meaning and an analysis of these 'systems of spatial meaning' is seen as aiding the understanding of environmental perception. It is also asserted that spatial organization has different meanings for each individual, and that cultures and groups incorporate certain ideas about space and imbue them with importance. This leads to Beck's (1967, 21) conclusion that "... the study of spatial distributions, real and perceived, is the cornerstone of investigations of interactions between humans and their physical environments". Murton's (1972) bias is towards understanding non-western groups and cultures. He stresses that different cultures organize phenomena in different ways, a statement which, if taken seriously, can aid geographers in adding "... a new dimension to the understanding of places". (Murton, 1972, 7).

Either an approach taking the complexity of man as a starting point, or one beginning with the environment in order to analyse the nature of man's interaction with his environment, leads to the conclusion that particular perceptions affect behaviour. These differing perceptions could show normative theories to be inadequate in some cases, because for every section of human geography there exists in theory a whole range of spatial patterns differentiated one from another by the value systems on which the patterns are based (Sarre and Edge, 1972). Reality for individuals, groups or

cultures is that which is perceived as reality, and true geographical explanation lies in adding a perceptual component to analysis.

### 2.1.3 Frameworks

A further step in the development of perception studies in geography has been the evolution of specific frameworks which attempt to demonstrate the basic processes which operated in the man-environment relationship. The three frameworks that are treated below will be evaluted in terms of their relative effectiveness in explaining the basic elements involved and the interaction between man and the environment.

Brookfield (1969) suggests that the way in which man perceives the environment is a sub-system of a larger man/environment system, both of which are outlined in Figure 2.2.

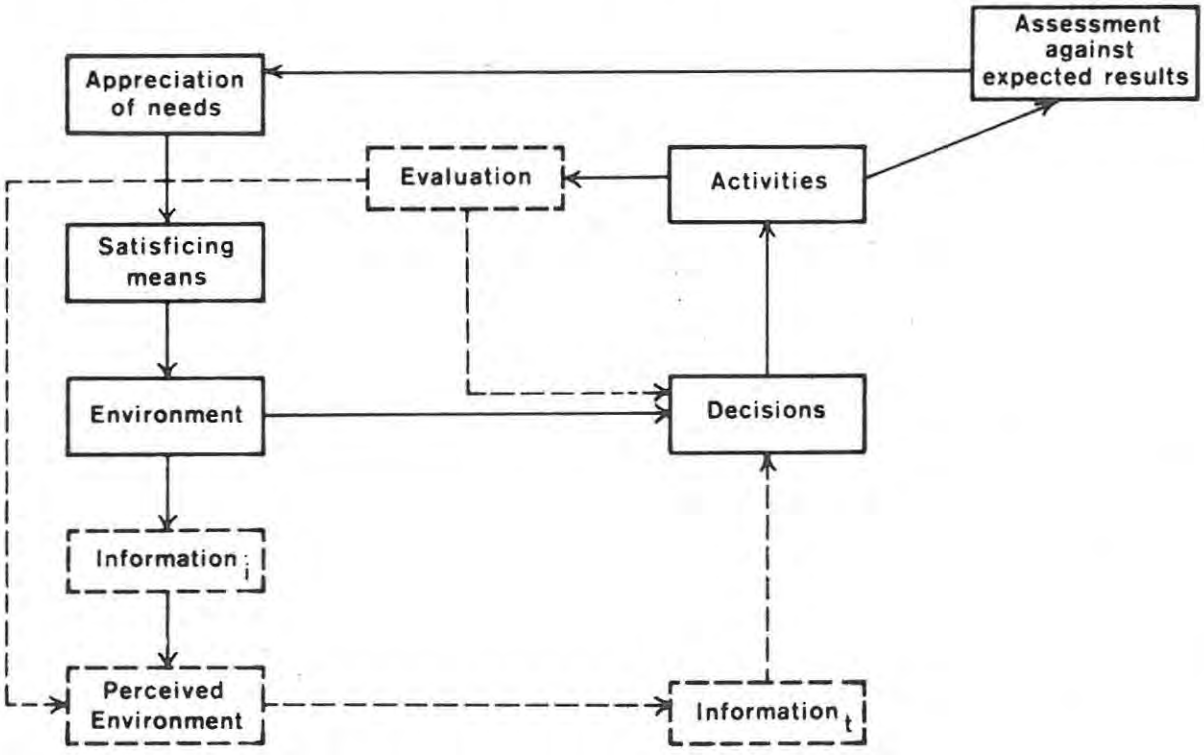



FIGURE 2.2. Man/Environment System. Compiled from Brookfield (1969)

If the main system is entered at 'activities' it can be seen that these are the result of decisions which are based on three aspects - the appreciation of needs, the means to satisfy them and the environment in which they take place. All these are then assessed against expected results. If the activities conform to the expected results, the basic flow will continue unchanged, but if the activities do not conform, modification will take place in all the elements resulting in changed decisions and activities. The process then repeats itself. The basic links and elements of the sub-system (broken lines) exhibit the elements and links of the perceived environment.

Beginning with 'environment', given a set of means and an initial set of information (information $_i$), an assessment of the environment with the aid of 'information $_i$' will result in the perceived environment. This then leads to 'information $_t$' which is a combination of information $_i$ and the perceived environment. This total set of information (information $_t$) interacting with 'needs' forms the basis for decisions which are then followed by activities. An evaluation of activities takes place in order to assess whether a modification of future decisions is necessary. This is said to be done directly by a modification of the perceived environment.

Various aspects of the framework deserve closer consideration. The first concerns the conception of the perceived environment as part of a sub-system rather than part of the man/environment system as a whole. The distinction is not clear in the light of previous works and the frameworks to follow, which consider perception to be fundamental to man's perception of the environment as a whole

(English, 1968; Wood, 1970). Similarly, the modifications of decisions after evaluation need clarification because it is felt that before decisions can be modified they must be perceived as being necessary, and therefore should pass through 'perceived environment'. On the other hand the separation of the perceived from the real environment is conceptually important though it might not be possible in reality. As such it explains behaviour as originating from the mental model of the environment which is a basic assumption of perception theory. The distinction between environments also enables the perceived environment to be defined clearly and allows some insight to be gained into the extent to which people perceive reality.

The framework developed by Pocock (1973) regards environment, perceiver and image as distinct entities, thus helping to clarify the constituent elements and processes taking place within each element (Figure 2.3). In contrast to Brookfield's framework, the environment of Pocock (1973) comprises three sub-sets: present information, stored information and present context. These elements interact to create a more complex situation than the 'information' considered in the previous frameworks.

Information as a result of the interaction, having entered the perceiver from the environment via the input selector, interacts in turn with four inter-related elements and the resultant image which comprises three connected aspects (Figure 2.3). The designative response is concerned with description and classification of the image, the appraisive with emotions, feelings and values attached to the image, while the prescriptive response is concerned

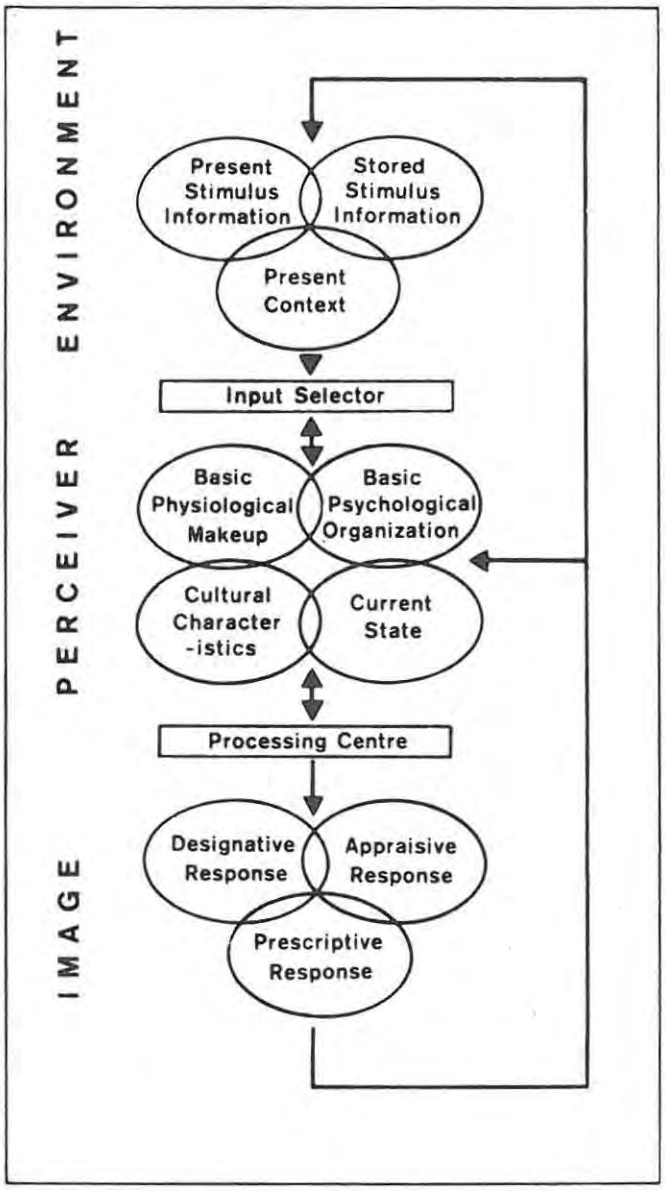



FIGURE 2.3. A Conceptual Model of Environmental Perception. Source: Pocock (1973, 252)

with the general application of the image to similar conditions - "... a depth, continuity, pattern of meaning beyond that justified by an experience of a particular scene alone" (Pocock, 1973, 256).

This framework serves to describe and categorize various segments of the environmental stimuli, the perceiver and the image. As

such it is not explicitly concerned with the links in the man/environment system which range from gaining information to the behaviour that takes place. Pocock's model does however prove useful because it concentrates on the derivation and structure of the mental image.

A further framework demonstrating the man/environment relationship is outlined in Figure 2.4 by Downs (1970). A description of the links and processes involved will be followed by an explanation of some elements such as the difference between the image and the real world, the perceptual receptors and the value system. General comments and aspects dealing with the system as a whole and concentrating on man as a decision-maker and as a complex information-

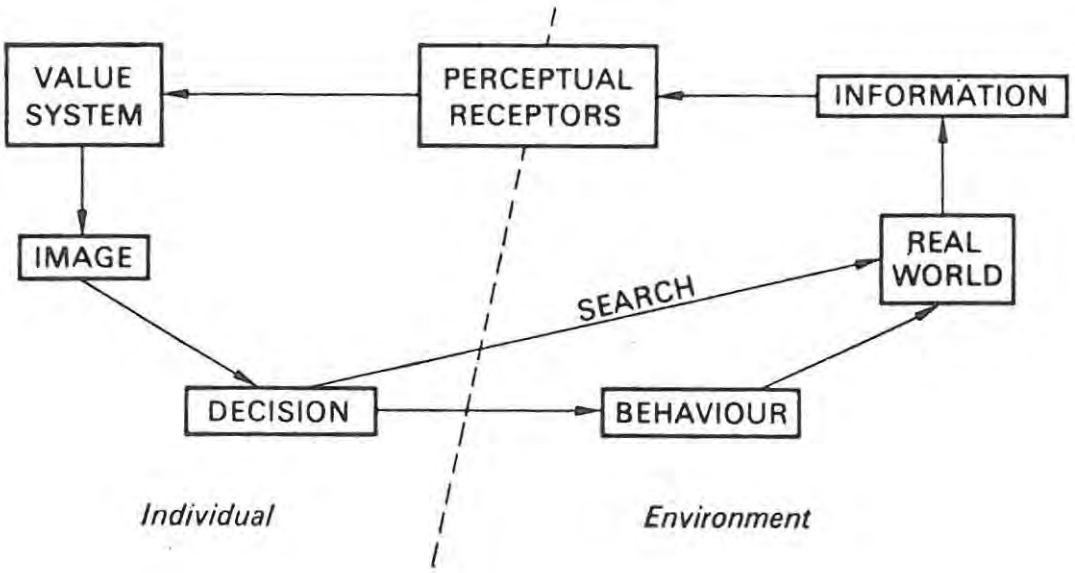



FIGURE 2.4. A Conceptual Framework of the Perceptual Process. Source: Downs (1970)

Beginning with the 'real world' as the source of information, the 'information' enters the individual through 'perceptual receptors', and is sorted by an interplay between the individual's 'value system' and his 'image' of the 'real world'. This sorted information becomes incorporated into the image which then leads onto 'decision' and ultimately 'behaviour' which is based on 'image' but works itself out in the 'real world'. This process can be short-circuited by 'search', a factor which inhibits or delays 'behaviour' for numerous reasons, one of the most important of which is inadequate information.

Within the framework the 'image' is separated from the 'real world', which is a useful conceptual arrangement because 'decisions' and 'behaviour' are made on the basis of the image and not the real world. Since this concept has already been dealt with in some detail in connection with Brookfield's (1969) framework, it will receive no futher treatment here. The perceptual receptors refer basically to the physical sensory organs which receive and filter incoming information from the environment. Although a detailed analysis of the receptors are not of much interest to human geographers, since they fall into the field of psychophysics mentioned earlier, they form an important part of the perceptual system because it is actually the perceptual receptors that link man to the environment. Another aspect requiring some explanation is the 'value system' because it is the value system which forms the context from which the image emerges. For example, the value system of an individual is made up of aspects of his culture, socialization, personal history and present milieu among others, and it is

the combination of a given set of these aspects that determine the actual image.

A few general characteristics of some note are also exhibited by Downs's framework. Firstly, there is a clear differentiation between the elements forming part of the environment and those of the individual (marked by the broken line), but the link between them, i.e. the perceptual receptors and the movement from decision to behaviour, is also clearly demonstrated. By distinguishing the individual from the environment and yet showing the links between the two, Downs clarifies, firstly, the processes involved in each and then how they link to form one system. Another important aspect of the framework is that the system includes the *basic* elements necessary for man to interact with the environment and is not linked to any specific interaction such as economic behaviour. As such, the framework is applicable to a wide number of contexts and is useful as a research framework. For instance it can be used in dealing with man/environment relationships within fields such as resource management, city planning, settlement and farming, to name just a few.

The framework possesses other distinguishing features such as its correspondence with contemporary views on perception put forward by the other social sciences - the focus on man as a decision-maker and the view of man as a complex information processing system. Since man's interaction with the environment involves a number of aspects from the other social sciences, such as environmental psychology and that perception itself was once considered almost entirely to be the domain of psychology, it is important

that these views be reconciled into a single system to ensure progress in this field. The framework, conceptualizing man as a decision-maker is especially relevant to this thesis since it, the thesis, deals with subsistence farmers who are characterized by the fact that their crop yields are a result of largely individual decisions. Because of the lack of market forces, for example, the specific crops grown and the other variety of activities, are based on the farmer's decisions, given his perception of the situation. The view of man as a complex-information processing system is another important aspect of the framework because it rules out the idea of man interacting with the environment in a stimulus-response situation. The pitfalls of this view have already been discussed and are contrary to the view held by this thesis and outlined by Downs's framework, that man responds to the environment on the basis of numerous variables. Some of these are, present stimulus, receptor functions, motivation and past stimulation (Downs, 1970).

The frameworks of Brookfield (1969) and that of Pocock (1973) although valuable contributions in their own right, do not adequately satisfy the criteria of effectively explaining the basic elements and the interaction between man and the environment. Brookfield's framework seems to lack clarity concerning the place of the perceived environment in the man/environment system as a whole, and the modification of decisions in the perceived environment itself. Pocock's framework is not directly applicable since it is not explicitly concerned with the links in the man/environment relationship.

Although Downs's (1970) framework does not pretend to be a comprehensive treatment of the interaction between man and environment, it is important for numerous reasons. These include the advantages of the other two frameworks such as the separation of the image from the real world to aid research, its clarity and general applicability, and its correspondence with the other social sciences in its formulation.

The frameworks outlined in this section represent recent attempts to conceptualize the man/environment relationship in a logical fashion. They demonstrate an awareness by geographers of the need to clarify basic elements and linkages together with understanding the processes by which they interact. Such attempts at model building mark a step towards measurement and are essential for testing hypotheses. The testing of hypotheses, in turn, is essential to the developing and refining of theory.

## 2.2 EMPIRICAL APPROACHES

Empirical approaches form the other major branch in the scheme chosen to classify perception studies in geography. Four main approaches have been selected: they comprise literary sources, psychological tests, quantitative techniques and narration, and the questionnaire. The groups are not mutually exclusive and the studies within each group represent only a sample of the literature available. A discussion of the works, however, should prove useful in three ways: by highlighting methods employed in perception research, by sharing the degree to which they support the theory, and by providing an overview of the work being done.

## 2.2.1 Literary Sources

To understand how people perceive their environment "... calls for substantial familiarity with social and intellectual history, with psychology and philosophy, with art and anthropology" (Lowenthal, 1968, 88). Nowhere else are these aspects more clearly reflected than in literature, a medium which has been widely used in perception research. Having noted the importance of literature in perception studies, the aim of the section is to discuss literature with respect to two fields - the landscape, and historical perception studies. In dealing with the landscape, literature is the most suitable means to reveal landscape tastes, world views, and beliefs, three aspects essential in determining how people perceive the landscape (Lowenthal and Prince, 1965; Lowenthal, 1968; Tuan, 1964, 1968). Similarly, a major means by which we learn about past societies and their perceptions is via literary sources.

Landscape tastes (attitudes towards certain landscapes) as reflected in literary descriptions, represent the idealized image that a group has of the landscape. The image is probably derived initially from the landscape itself, but subsequently if the landscape does not conform to the image, it is modified to fit the image. English literature includes conflicting elements with regard to landscape tastes and is treated at some length by Lowenthal and Prince (1965). Some of the themes include the rejection of the city, yet preservation of old buildings; a preference for the irregular in flora, but a fixation for neatness seen in trimmed hedgerows and turf. A dislike of fakes has

an ironic counterpart in the use of facades to decorate buildings because 'things must look right'. Among these irregularities of taste, three major attitudes emerge: antiquarianism, the rejection of the present, and the unimportance of the functional. In contrast, the American landscape reflects two important aspects - utility and a belief in the glorious future of America (Lowenthal, 1968). The attitudes are concretely manifest in the continual demolition and construction of buildings, and the prevalence of open spaces filled with rubble which point to the 'unfinished landscape' in preparation for the ideal one to come.

Views of natural processes and beliefs leading to certain attitudes towards nature are dealt with by Tuan (1964, 1968) by recourse to literature. His former study deals specifically with the perception of the natural processes involved in the formation of mountains and the attendant sentiments. Ruins have traditionally evoked feelings of tranquility and melancholy, but mountains (erosional ruins) have not generally been associated with such sentiments except in the American West. The explanations outlined by Tuan are twofold, consisting of firstly, the cataclysmic/structural view of mountain formation, and secondly, the humid North-Western European climate. For instance, seventeenth and eighteenth century geological writers considered the mountains to be the result of catastrophic earth movements which produce anything but an atmosphere of tranquility. These views were replaced by others which considered mountains to 'thrust up' and grow from beneath and were put forward by the Platonists and poets such as Milton and Wordsworth. Despite the fact that the erosional view of the

origin of mountains goes back to the Thirteenth Century, and was later developed by Holton and Playfair, this idea did not gain general acceptance until the last quarter of the Nineteenth Century. Another factor was the North Western European climate, which being humid, caused the vegetation to cover the bony structure of mountains and the talus slopes of tumbling rock. Only in the arid areas of the American West was the erosion of mountains plainly visible, creating an atmosphere of melancholy written about by poets and writers of the last three centuries.

Tuan (1968) shows, that while there is a difference in attitude towards nature between the Western European culture and the Chinese, the difference in terms of the corresponding exploitation of the environment is not very great. Two themes that emerge strongly are that the Western Europeans dominate nature, while the Chinese tend to adapt themselves to it. Tuan shows how the West European attitude is based on the Christian belief concerning the dominance of man over nature, and that the corresponding quiescent attitude of the Chinese is based on Taoist and Buddhist traditions. The example given by Tuan is that of the garden. The western garden is formalised in terms of geometric proportions and straight lines, whereas the Chinese garden adapts itself to the natural contours. While the highly specialized neo-Confucian and Taoist philosophical literature praises the adaptive attitude of the Chinese towards the land, Tuan also shows from more analytical literature dealing with forestry, economic areas, industry and ecology, that the Chinese attitude toward nature carries ambiguities. The major ambiguity lies in the fact that to make something adapt to the 'natural

pattern', natural resources have to be used (for example, timber necessary to build a city) because "... civilization is the exercise of human power over nature" Tuan (1968, 184). Although there is an apparent greater 'ecological awareness' by the Chinese than in the West, in terms of tonnage of earth removed and deforestation, the impact on the environment is similar. The literature used in the above studies varies greatly in type and the age in which it was written. Lowenthal and Prince (1965) and Lowenthal (1968) use an especially wide variety touching on words, newspapers, political works, travel accounts, essays, opening addresses and journals. Works from the Eighteenth Century to the present are consulted. The literature used by Tuan is different in that it is restricted to more analytical material on China, though novels and philosophical works are also used. While very little of the literature was initially geographical, it has been used by the above authors for geographical ends.

The extensive use of literature in historical perception studies reflects the fact that literary sources are the major means of arriving at perceptions of the periods under consideration. McManis (1972) in building up a picture of the impressions of the New England Coast between 1492 and 1620 uses various types of literature to explore two aspects - the actual physical knowledge of the coast, and the image of it. Cartographic styles were used to reflect the physical image of the coast, and it was found that early cartographic descriptions contained representations of the coast, not based on knowledge but the prevailing mythology. For example, the peninsular style reflected the idea that the coast

was a peninsula of a greater Chinese mainland. Finally, the realistic style emerged in 1620 with the Champlain and Velasco-Smith maps, which were based on explorations and expeditions, i.e. seeing and surveying the coast first hand. The use of cartography as a reflection of man's impressions of the coast is both reliable and appropriate because each map incorporates some contemporary theory or image.

The effectiveness of certain types or an interplay between various types of writing contribute a great deal to the process and pattern of settlement in various parts of the world. Five types of literature each producing different images are identifiable - promotional literature, official reports, travel accounts, natural history accounts and settlers' statements. Promotional literature aims at presenting an image which will attract settlers - "Although it is not possible to measure the proportion of Europeans who came to South Carolina in response to promotional efforts, there is no doubt that it was substantial" (Merrens, 1969, 536). Christopher (1973) in dealing with the settlement in Southern Africa states that promotional literature caused settlers to occupy areas which would never have been inhabited had they known the true state of affairs. In order to lure the public, promotional literature tends to stress the 'new land' as a terrestial paradise at first, but as more information filters back, the focus shifts to praising specific conditions (the mildness of the winter) and stressing other resources such as favourable soil. While promotional literature was certainly the most prolific, the travel accounts were the least revealing and superficial, because most of them represented very brief visits and descriptions restricted to particular places.

The settlers' statements are important because it was the settlers who were in closest contact with the environment and had to contend with its variable nature. Two aspects were prominent - descriptions of the climate and the quality of the land, but because of the fragmentary nature of their communication, the statements had little impact.

Source documents can illustrate differing perceptions between social groups. For example, Le Blanc's (1973) study is concerned with the differences that are revealed in two strata of society (the folk and the elite) on the issue of reclaiming the salt marshes in Nineteenth Century America. The folk perception of the marshes was one of an area suitable for grazing and one hay crop per year,as well as a source of fowl and fish. The elite perceived the marshes as potentially much more productive, and with the increased introduction of agricultural innovations and journals, the elite became less and less satisfied with the traditional returns. Le Blanc (1973) explains these different perceptions in terms of varied interpretations of scripture, the folk believing that to drain the marshes was to tamper with God's design, while the elite stressed the agency of man on earth.

While objections may be raised about the representative nature of the literature and the subjective method of evaluation, the data being dealt with are ideas, tastes, and attitudes. These abstract phenomena are not easily classified, marked or measured, but are more qualitative, suggestive and most appropriately couched in descriptive terms. Description need not be considered an inferior research technique as explained earlier (Wright, 1947; Watson, 1975).

Furthermore, the approach is acceptable as long as researchers remain aware of the problems in deriving their data from literature, and the fact that they are forced to consider only a small portion of the published material which could be representative of a small literate minority.

### 2.2.2 Psychological Tests

Various psychological techniques have been applied to perception studies in geography. Images have been gained by using the Rorschach Test, Rozenzweig picture-frustration study, the Szondi Test, card sorting techniques, the Thematic Apperception Test (TAT), the Semantic Differential (SD), and expressive techniques such as drawing (Saarinen, 1973). The tests used most frequently, are the TAT, SD and drawing, and will therefore be treated in greater detail below.

Saarinen (1966) used the TAT in a section of his study of the farmers' perception of the drought hazard on the Great Plains and how this affected their adaptation to the environment. The test consists of picture cards, and the respondent is asked to tell a story about each picture. A dominant theme is extracted from the stories. Assuming that perception is a function of personality, the TAT is considered a reasonable way of determining personality traits and therefore ultimately, the perception and attitude towards the environment. The cards used by Saarinen incorporated some of the conventional TAT pictures, as well as ones showing drought conditions on the Great Plains. Focusing on the farmer's attitude towards nature, the test offered a mechanism whereby one could arrive at the way which the farmer

viewed the landscape, how he 'coped' with it and what he thought the resolution might be. The findings of the test were classified into three categories - man over nature, man in harmony with nature and man under nature. The finding showed that 17% of the respondents held attitudes of man over nature, 17% man in harmony with nature and 66% man under nature. Further investigations showed that a fair proportion of farmers who were shown to be in harmony with or over nature, as well as those under nature, experienced emotional conflict in terms of achieving sufficient yields (88% in all). Saarinen also found that the farmers did nothing about this conflict or employed only passive coping mechanisms. The test was employed as a means to explain the differing perceptions of drought by the farmers, and the results revealed that all three categories were perceptive of the drought risk, but that there was a possibility that those with an attitude of man over nature were less perceptive.

Although the TAT does yield a rich source of information, the technique also exhibits certain problems. Milgram (1973) questions the quality of evidence suggesting that the TAT is better at stimulating a response than as a source of evidence. This leads onto two other problems, interpretation and classification. The possibility of misinterpretation is great when trying to extract themes due to the highly personal responses, and classification remains a problem because of the potential latitude of the responses in a test which stimulates story telling. The TAT does however represent an attempt to probe the mind and externalise the attitudes that affect behaviour.

The Semantic Differential test is another technique used in perception studies. The respondent is confronted with pairs of bi-polar adjectives (Table 2.1) and is asked to record his impression by choosing a point on a seven point scale representing a certain level of intensity. The midpoint (4) characteristically carries the value of nought since it represents the weakest level of intensity in terms of the adjectives given. Because the data are selected numerically, they may be treated quantitatively and subjected to statistical analysis.

TABLE 2.1. Bi-polar Adjectives in relation to Perception of Cities. Adapted from Norcliffe (1974)

| | |
|---|---|
| Poor parks ..... | Good parks |
| Small variety of shops ..... | Great variety of shops |
| Mostly new housing ..... | Mostly old housing |
| Dull place ..... | Exciting place |
| Little industry ..... | Much industry |
| High local taxes ..... | Low local taxes |
| Good entertainment facilities ... | Poor entertainment facilities |
| Untidy sidewalks ..... | Tidy sidewalks |
| City too large ..... | City too small |
| Little pollution ..... | Much pollution |

Two studies using the SD approach are those of Knight and Rickard (1970) and Norcliffe (1974). The former writers used the technique to test whether a group perception or 'ethnogeography' among farmers in South Western Kansas existed. They found that differences related to farms and farmer attributes, when combined, formed a group image significant at the 90% confidence level.

Norcliffe (1974) used the same test in order to confirm objectively that group images of Kitchener and Waterloo, by the residents of these towns themselves, exist.

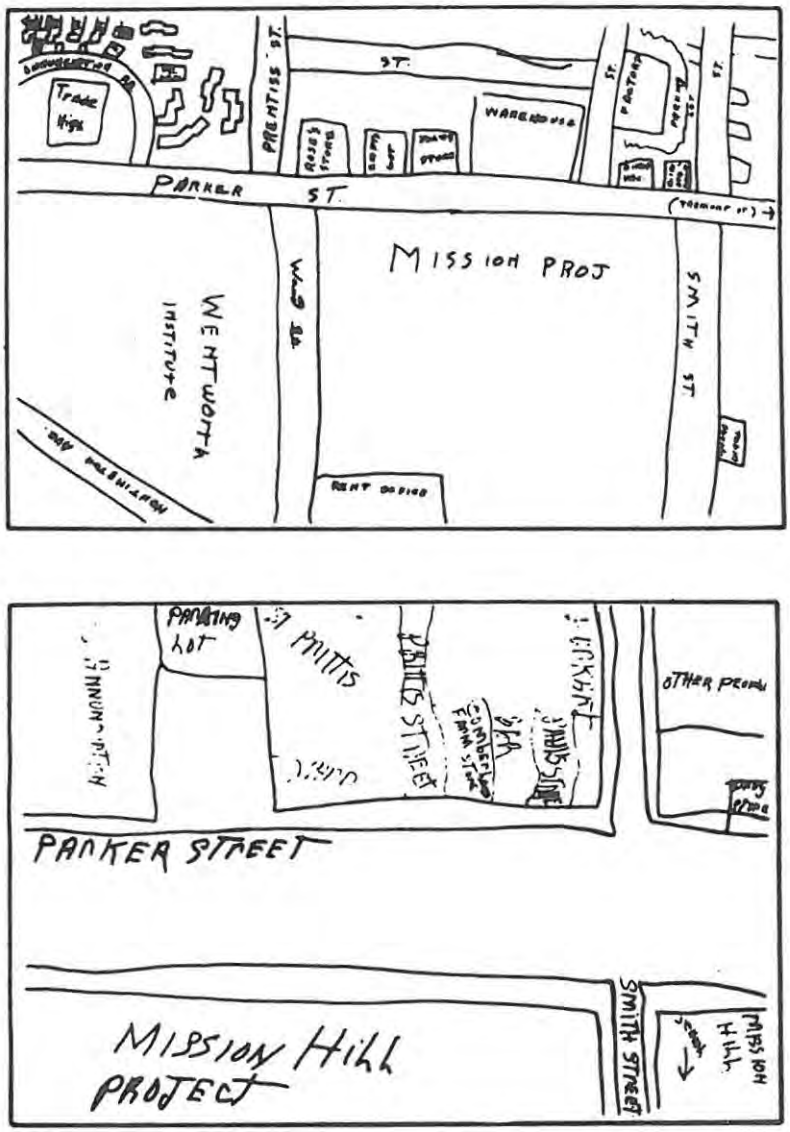
In using the Semantic Differential test various aspects should be borne in mind. Firstly, the question arises whether in fact the image obtained by the test is indeed the image of the respondents, because it is the researcher who chooses the adjectives and the respondent merely scales his attitude towards them. Secondly, because the respondents are confronted with a set of adjectives already chosen, it seem axiomatic that a group image would emerge since the only differences tolerated by the system are ones of degree. Finally, despite complex philosophical and psychological reasoning dealing with the concept of scaling (Osgood et al, 1957), the task of deciding on a specific intensity along a seven point scale for a variety of areas and associations remains a difficult one (Gould, 1972).

The expressive technique of drawing from memory a map or maps of various areas is common in perception studies (Lynch, 1960; Ladd, 1967; Saarinen, 1967, 1971; Pocock, 1973). By drawing a map, the individual is thought to externalise various characteristics of his image of the area drawn. The sketch is thought to reveal physical knowledge as well as experience and attitude towards the area. Part of Lynch's pioneering work on the 'legibility'of Boston, Jersey City and Los Angeles made use of the mental map approach. Legibility is described as the use with which the parts of a city "can be recognized and can be organized into a coherent pattern" (Lynch, 1960, 2). This involved the drawing of maps by city

inhabitants themselves. From these maps, interviews and the work done by specialised researchers, various elements of the 'cityscape' were recognized as important. These were nodes, paths, edges, districts and landmarks. These elements are thought to be important in unfolding a clear image of a city and a modified version of this approach, arriving at much the same conclusions, was undertaken by Saarinen (1967) in his study of the image that the students had of the University of Arizona Campus.

A more interpretive approach is used by Ladd (1967) where not only is the map regarded as revealing physical knowledge of the area, but also the psycho-milieu of the respondent. For example, large spaces may be interpreted as a result of fear and/or a psychological barrier as in this case of black children's perception of the White Mission Hill Project and Parker Street (Figures 2.5.1 and 2.5.2).

While the map is useful as an indicator of knowledge of an area, interpretations from sketch maps should be treated with caution because they are free-hand sketches done by non-experts. An overview of the psychological techniques demonstrates that while all of them do have limitations, they represent attempts to achieve greater objectivity in 'dealing with mental imagery'; the TAT concentrates on personality, the SD on group images, while the mental map approach deals more specifically with spatial perception.




FIGURES 2.5.1 and 2.5.2. Mental Maps of a Philadelphia Neighbourhood (Gould and White, 1974)

2.2.3 Quantitative Techniques

Another trend in empirical perception studies, and one that is perhaps least developed, is that of quantification. The techniques represented in this section include principal components analysis to produce isoline maps and a type of extended game theory to model the agricultural landscape. Gould and White (1968 and 1974) link principal components analysis to the mental map approach to show

how people perceive areas around them in terms of residential desirability. In two different studies they interviewed British school leavers and American students from different parts of Britain and America respectively, and asked them to evaluate certain areas of their own countries. A matrix of responses was then formed listing the scholars and students against their scaled order of desirable areas. From this data set, a correlation matrix was derived, after which a principal component was extracted upon which each area was scored. By this method individual preferences were combined into overall scores which were then plotted cartographically using contour lines. The 'uplands' represent areas of high desirability, while the 'lowland' areas are the ones that are avoided. While maps of area desirability do not explore or attempt to understand the underlying causes, prejudices and biases, they do map their spatial manifestations and the factor analytic technique seems an appropriate method to assist this process. On one level, these distributions are significant and have considerable policy implications. Since residential desirability is closely linked to migration decisions (Abler et al, 1971), in data-poor areas of the third world, such as Ghana, potential rural-urban migration patterns could be suggested by the use of this method and planned for accordingly.

Chapman's (1974) study of the farmers in South Bihar is important because it is apparently unique in its use of a combination of perception, cybernetics, and information theory to assess the farmer's capacity to regulate conditions related to his crops. Perception is a crucial element in the study because it directly

affects the degree of regulation undertaken by the farmer. Using this type of extended game theory the results can be quantified. Quantification is based on three information sources - the physical environment, the farmer, and the crop, all three of which can be measured in terms of specified values after cell aggregation and the derivation of frequency distributions has taken place. The vector of probability of the environmental disturbance (D) is calculated by obtaining information of drought, rain and pest-attack from the farmers, and then comparing it (D) with daily climatic data. The transition frequency matrix (T) is calculated from three states of crop yield (a, b and c) in relation to environmental conditions and farmers' choices, while the reaction matrix (F) is based on the equipment that the farmers have and their capability to react. The resultant matrix (E) is developed by firstly, multiplying the transition frequencies with the corresponding elements of the vector of probability of environmental disturbance and then multiplying the results with the reaction matrix. The links between the matrices are shown in Figure 2.6 and may be explained as follows: the farmer (F) receives information from the environmental disturbance (D), which causes him to activate his regulatory equipment (T) to block information (i.e. drought or pest-attack) from the environment to the crop. This results in the degree of crop yield (E).

Although this type of research is still in its infancy, it is one of the few attempts to model an agricultural landscape at an individual level - a section of human geography which up to now has been neglected despite the importance of the subsistence sector in the Third World (Chapman, 1974).

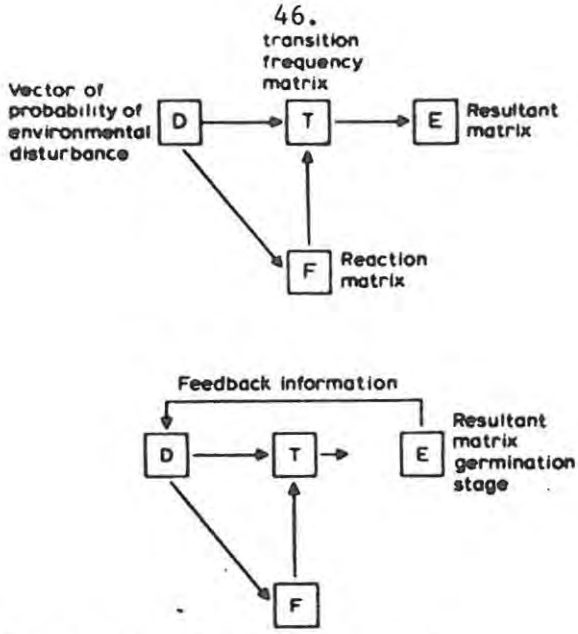



FIGURE 2.6. The Regulation Framework.
Source: Chapman (1974)

The use of quantitative techniques in perception studies is aligned with the rise of quantification in geography. While a detailed treatment of quantification would be out of context, two aspects are considered important - the use of quantification in developing theory (Burton, 1963) and its role in practical applications (Haggett, 1972). Both aspects require mathematics and statistics in order to measure relationships and determine their level of significance. The use of the isoline map to test residential desirability in terms of accessibility, as in Gould's study in Ghana, is able to show actual intensities where significance can be computed and the theory evaluated. The same process is applicable to the mathematical expression of the various relationships between the environment, farmer, and crop in Chapman's (1974) study. Once theory has been developed sufficiently, it can be used in planning situations, such as providing for influxes or improving the farmer's ability to cope with the environment. The main limiting factors of quantification appear in the type of data being dealt with,

since not all data are suitable for numerical analysis. The number of simplifying assumptions that have to be made to handle the computations also limit explanation.

2.2.4 Narration and Questionnaires

The two final approaches to be mentioned in this section are the narrative technique of presentation and the use of the questionnaire. Narrative presentation represents an attempt to overcome the problems of cross-cultural perception and portray an adequate view of how the peoples themselves perceive their environment. By contrast the questionnaire does not have a specialised function to that degree, but is one of the most basic ways of gaining information and is in fact the approach adopted by this thesis. The choice of the questionnaire as the research tool will be treated at some length in Chapter 3.

Porter (1963), in his study of the Suk of Kenya, uses the first person narrator. This technique in which he employs a 'Suk narrator' to describe the environment first hand as perceived by him (the narrator) is a useful technique in the absence of a literary tradition. Two themes emerge: the climatic classification of the different parts of the environment, and the use made of these different conditions. The technique portrays adequately the intimate knowledge that the Suk have of their environment ranging from differences in temperature, rainfall, and vegetation to twelve different types of soils. An important aspect of this classification deals with the names that are given to various parts of the environment, since, these reflect how the Suk perceive them. For example, *Masob* means 'cold country' while the plains are called

*Masol* - a name referring to a type of grass suitable for grazing. The use that the Suk make of their environment is mainly in relation to food production, and with their limited technology, they have not transformed their environment to any extent, but have related their agricultural and pastoral practices to the differences that they perceive in the landscape.

One aspect of narration deserves closer consideration, and that is the possibility of the 'audience' not fully understanding the subtle meaning of words especially if they belong to a different culture. To avoid this type of misunderstanding, Porter employs a device that ensures that the meanings of the words have been understood. For example, "... so when we call one climate *masob*, we mean cold country not cold climate". (Porter, 1963, 2). Although Porter does not mention how he obtained the data, the narrative presentation consists of a systematic treatment of the various aspects which present a unified picture of the Suk's view of nature.

Restating the fact that the approaches are not mutually exclusive is especially applicable to the use of the questionnaire, because it is often used in conjunction with the psychological tests and often forms the basis of the quantitative approach. It is, however, also used as a research method independent of the others as in the work of Merchant and Marotz (1975).

The work of Merchant and Marotz deals with the less obvious problem of nitrogen and phosphorus pollution caused by runoff from agricultural lands. The aim of the study was to test the awareness of a group of farmers in Douglas County, Kansas, regarding soil

erosion and water quality, as well as trying to isolate factors that influence their decisions. The findings, using the questionnaire, were reasonably significant when compared to the report on nitrogen and phosphorus levels in streams which had increased to 74 and 84 per cent respectively, and are summarised below. The basic water quality problem as a result of soil erosion was not perceived correctly, with many farmers considering erosion problems to be overcome. If they recognized erosion as a problem, traditional methods of conservation were used on the waste areas. Another finding was that most farmers conceded that farms were sources of pollution, but felt that this was exaggerated in comparison to the cities. Many of the farmers also held false views concerning the self-purification of water. Having arrived at the above views which support the high pollution level, the questionnaire is considered a viable research tool in its own right.

The empirical approaches rely on and link up to a lesser and greater extent with the theoretical statements in the previous section. The same general methods such as the use of literary sources, quantitative techniques and the questionnaire seem to be based on broad perceptual statements or are flexible enough to incorporate perceptual elements into their investigations. The psychological tests on the other hand, as well as an aspect of narrative presentation are derived from more specific theorising. Basic to all the empirical methods used is that behaviour is a function of the image (or perception) of the real world, and that this image differs from reality (Brookfield, 1969; Downs, 1970).

The studies on landscape tastes, impressions of the New England Coast, the settlement of colonies, and the perception of marshes, focus on two scales - images as a result of culture, and images as a result of sub-cultural groups. As such these studies dovetail with the theoretical statements made by Wright (1947), Kirk (1963), English (1968), and Eyles (1971). The first three authors deal with perception as culturally determined, while Eyles deals more specifically with the socialization process that causes different perceptions of different classes of people in society. Eyles's study can be linked with Le Blanc's (1973) where he discusses the different views relating to the reclamation of the salt marshes by the folk and the elite.

The Thematic Apperception Test and the Semantic Differential are more specialized techniques based on the assumption that perception is a function of personality. The TAT as used by Saarinen (1966) deals with aspects of personality that are concerned with environmental appraisal only, rather than personality as a whole. The distinction between 'environmental personality' and other aspects of personality is considered important by Sonnenfeld (1969). Four relevant 'environmental personality' traits according to Sonnenfeld are sensitivity, mobility, control over the environment, and risk-taking of which three (mobility excluded) are dealt with by Saarinen in his study of drought on the Great Plains. The theoretical and empirical in this case, can be seen to be especially closely linked. The SD deals with a different aspect of personality, conceived mainly with the ability to arrive at a certain intensity of attitude. Although SD has been used in empirical geographic work such as that

of Norcliffe (1974) the corresponding theoretical statements have not entered into geography to any large extent, but a definitive work on the theory is available - Osgood et al (1957).

A final link between theory and empirical work is seen in Porter's (1963) work on the Suk, and the statements made by Lowenthal (1961) and Prince (1971). Both Lowenthal and Prince mention the importance of language in revealing images of the environment. Suk words such as *Masol* (the word used for plain) demonstrate this principle, because it actually refers to a type of grass suitable for grazing. The plains are not therefore perceived in terms of relief, for example, but in relation to their function for the Suk.

Studies in perception have mushroomed along both the theoretical and empirical approaches and the two aspects together form a considerable contribution both to the philosophy and methodology of geography. Although still not well developed (Chisholm, 1975), the perceptual approach is a response to two main conditions in geography, inadequate conceptualization of the interaction between man and the environment, and the use of normative models in which too many variables are 'frozen' resulting in unsatisfactory explanations (Sarre and Edge, 1972). The notion of the image forming the interface between man and the environment is a significant step forward. The problem lies in the measurement of images to make them workable. Viable frameworks permitting measurement have not yet been developed, but commitment to the perceptual approach in geography is recent and concepts still have to be tested both in depth and in broader contexts.

# CHAPTER 3

# RESEARCH FOCUS AND METHOD

## 3.1 RESEARCH FOCUS

The core of the research revolves around two aspects: a description of the people's image of agriculture, and, an analysis of their socio-economic characteristics in an attempt to find a basis for the formation of the image. The application of the above two aspects involves three steps:

1. A consideration of literature dealing with Ciskeian agriculture in the hope that it might aid the construction of an agricultural framework suitable for analysis.
2. An application of an Environmental Perception approach to the agricultural framework.
3. A justification of the use of socio-economic characteristics as important bases on which images are formed.

### 3.1.1 The Agricultural Framework

Studies that have been found to deal with agriculture in the Ciskei have not treated agriculture as a comprehensive cultural institution made up of a number of factors. Instead, agriculture has been investigated as a means of production (Houghton, 1955), seen as a primary industry (Scholtemeijer, 1970) and related to various anthropological aspects such as religion, magic, education and work organization (Raum and De Jager, 1972). It has also been seen as a major component of economic development (Brown, 1969; Univ. Fort Hare, 1970; Hamburger, 1970;

Lombard and Van der Merwe, 1972 and Black Homelands in South Africa, 1976). The applicability of the above works on Ciskeian agriculture to the present study is considered limited because a description of the people's image of agriculture must involve a wide range of factors both economic and non-economic because of the basic complexity of agricultural systems.

The view of agriculture put forward by this thesis is that agriculture must be seen as a system because the systems view of agriculture identifies the components and thus aids analysis of the agricultural institution as a whole. This point of view is supported by Wharton (1970) who considers the preoccupation with one sector inappropriate. Although agriculture is viewed as a system, the present study does not attempt an ecological approach in which it sets out to analyse the agricultural system by isolating all the components and then explaining all the relationships between them. The reason for not adopting the ecological approach is that man's relationship to the environment is too complex to be "... even approximately interpreted within an ecological model" (Chorley, 1973, 156). Instead, agriculture is seen as a system because it provides a comprehensive framework for agriculture. As such, it merely aids the identification of the major factors that constitute the agricultural system. The actual factors which make up the framework, Table 3.1 below, are based on the Hapgood-Millikan classification (Appendix A).

TABLE 3.1. Conceptual Framework of Agriculture
Adapted from Wharton (1970)

| |
|---|
| 1. PHYSICAL FACTORS |
| a. Soil fertility |
| b. Field size |
| c. Rainfall |
| d. Positioning of fields |
| 2. SOCIO-CULTURAL FACTORS |
| a. Church |
| b. Social occasions |
| c. Local-level politics |
| d. Cattle |
| e. Employment in town |
| 3. ECONOMIC FACTORS |
| a. Division of labour |
| b. Adequacy of crop yields |
| c. Reasons for inadequate yields |
| d. Means of increasing production |
| e. Means of achieving a surplus |
| f. Technology |
| 4. KNOWLEDGE FACTORS |
| a. School education |
| b. Agricultural radio programmes |
| 5. ORGANIZATIONAL FACTORS |
| a. Extension ideas |
| b. Farmer's associations |
| c. Tenure |

The choice of the Hapgood and Millikan classification to form the basis of the agricultural system was made because of the universality and wide applicability of the factors. The classification is considered to contain "... an exhaustive and almost

comprehensive list of the relevant factors and variables that affect agricultural development," (Wharton, 1970, 388). The wide applicability of the factors makes the classification relevant to the Ciskei since most agricultural systems are comprised of physical, socio-cultural, economic, knowledge and organizational factors. While the classification outlines the key agricultural factors, the elements that make up the factors differ from area to area. For example, the important physical elements in the tropics that affect agricultural practices might be different from those experienced in semi-arid regions. The classification can therefore be used to outline the factors, whereas the elements that make up the factors must reflect local conditions. This means that the elements listed below the Hapgood Millikan classification may need modification or may even be rejected. For example, since the Ciskei has no tractor stations, the inclusion of that particular element in the investigation would not serve any purpose. The elements in Table 3.1 are derived from literature on peasant economics and more particularly from literature on homeland development and the Ciskei itself. An outline of the basis on which the specific elements were chosen, follows.

The three physical elements were chosen mainly by preliminary interviews with the people in the communities before the survey was undertaken, but also from literature, namely, the Tomlinson Commission report, (Govt. Printer, 1955), Lombard and Van der Merwe (1972), Grobler (1972). The physical factors uppermost in the minds of the people were soil fertility, field size, rainfall and

positioning of the fields. The positioning of the fields was not included in the analysis because the quality of response to that particular aspect was unworkable, a point to be elaborated when dealing with the questionnaire in detail. Soil fertility and rainfall as basic physical elements in agriculture cannot be disputed and are mentioned in general terms in all the above studies cited in connection with the physical elements. It must be stressed, however, that no micro-environmental data at the community level is available for soil fertility or rainfall in the Ciskei except for the Keiskamma River basin. The data is therefore general and applies to the Ciskei as a whole. Field size was recognised as an issue as early as 1955. At that time the Tomlinson Commission report admitted that a fair proportion of the Africans in the African areas (now known as homelands) would not be able to occupy the five morgen plot that the commission considered as a basic size for commercial farming. Conditions have deteriorated because of population pressure on the land, and as mentioned in the Introduction, only 10% of the rural population occupy 'economic holdings' of the same size (Sebe, 1974).

The elements under socio-cultural factors were decided upon on the basis of general studies on peasant economic organization. Both Nash (1967) and Ford and Douglas (1967) stress the fact that the economic life of peasants is not separated from other cultural institutions and social activities. The interdependence between economic activity and wider social aspects, being a characteristic of peasant economics, was considered applicable to Ciskeian rural communities whose major economic activity is

semi-subsistence agriculture. The related socio-cultural institutions of religion, social activities and politics, were chosen on the basis of their being cultural universals (Barbu, 1971; Hammond, 1971). The element of religion was confined to the perception of the Christian church because no traditional rites were found to be practised in relation to agriculture. The social occasions listed were beer parties and visiting friends and relatives, while the political life was confined to local-level politics. The reason for concentrating on local-level politics was that party politics only really impinges on the other activities of the people in the rural communities at election time and therefore cannot be said to be closely related to their agricultural activities. On the other hand, local-level politics involves the chief and/or headman and the local village commitee, which oversees the full range of community activities. Cattle and employment in towns are other elements in the socio-cultural sphere - cattle because of the special place they hold in the economy (Herskovits, 1962) and employment in town because it represents the major alternative of earning a living, as opposed to agriculture (Butler et al, 1977). In asking for perceived responses to these elements, it was hoped that some idea may be gained as to the importance that the people attach to agriculture (i.e. actually cultivating the fields) in relation to the other cultural aspects.

The specific economic elements are derived from a consideration of subsistence agriculture in general and specific studies on the Ciskei which will be cited as each element is discussed. The elements are: the division of labour, aspects concerned with

production and technology. Although the traditional division of labour, where the women cultivated the fields and attend to household chores, while the men were preoccupied with the livestock and aided with the ploughing (Herskovits, 1962; Dalton, 1967), has been modified, it still exists. The reason for the continued existence is, firstly, because the people in the communities still employ largely traditional methods of production within the framework of tribal organization (Raum and De Jager, 1972). Secondly, the large scale migration of men to the urban areas of South Africa to sell their labour (Lombard and Van der Merwe, 1972), forces the women in the rural communities to participate in an even greater extent in the agricultural activities than before. The existence of a division of labour in the agricultural system, makes the investigation of this element relevant. Production is an economic element of any agricultural system, but the basic issue in connection with the subsistence agriculturalist is the low level of production and the means of increasing productivity (Mosher, 1970). Since the production level of the staple crop, maize, is low in absolute terms, averaging 1,4 bags per morgen (Black Homelands of South Africa, 1976), the four elements listed in Table 3.1, viz., adequacy of crop yields, reasons for inadequate yields, means of increasing production and means of achieving a surplus, are directly related to the production level of maize in the communites. The presence of technology in any agricultural system is another element that cannot be disputed. The two major technological devices used in the Ciskeian communities are the hoe and the ox-drawn plough (Raum and De Jager, 1972).

Of the knowledge and organizational elements listed by Hapgood and Millikan (1965) (Appendix A), those outlined in Table 3.1, reflect those applicable to local Ciskeian conditions. The aspect of tenure was not included in the analysis because of certain misinterpretations that became evident once the sample was completed. The aspect of tenure will receive more detailed treatment in the section which evaluates the questionnaire.

By using a classification that can be considered to list agricultural 'universals' and also reflect local conditions, it is hoped that a view of agriculture might not be imposed on the people and that their responses would reflect their image of agriculture and not the researcher's. Having outlined the framework for investigation into agriculture, the relevance of a perception approach applied to this framework follows.

### 3.1.2 The Perception Approach applied to Agriculture

Since the relevance of the perceptual approach has already been given in general terms in the Introduction, two aspects will receive attention at this stage. These are the importance of perception in all behaviour and the potential that the approach offers in the analysis of local conditions. The link between perception and behaviour has already been outlined by numerous authors reviewed in Chapter 2, the most important being Kirk (1963), English (1968), Brookfield (1969), Downs (1970) and Pocock (1973). The authors show that behaviour is based on perception, therefore an understanding of how the object, idea, innovation or environment is perceived, should explain

behaviour. This idea is aptly put forward by Wood (1970, 129): "Perception can be envisaged not as just another ingredient of the socio-economic pottage, but as a factor which is present in all human activity." Since agriculture is one of the primary human activities, the application of the perception approach to this field could aid in the understanding of agricultural activities. It follows, therefore, that if an area is characterised by a low level of agricultural performance resulting in low crop yields, the image of the people could reveal certain attitudes, values and motives related to these activities which result in the low yields. Once these attitudes have been isolated, change should be able to be initiated in meaningful fashion by taking the attitudes into consideration. For example, the low level of participation of a certain community in agricultural activities could be a result of their perception of the rainfall to be poor. The inability of the community to change the circumstances in this instance, could lead to a negative attitude which manifests itself in low involvement. Once the image of rainfall is recognized as the causal factor in the low yields, the specific element of rainfall could receive attention by the extension service. The perception approach is, therefore, geared to arriving at a specific image recognizing that the image is ultimately responsible for the local patterns. Since the aims of the thesis do not include an investigation of behaviour, but concentrate on the image, it represents an investigation into the first stage of the image - behaviour - real world relationship, the image.

The links between the elements of the perceptual process are most

clearly demonstrated by the schema put forward by Downs (1970), Fig. 3.1 and this schema has been adopted as the theoretical framework of this present study. It is, therefore, represented again by Figure 3.1, although evaluated in detail in Chapter 2, in preference to the frameworks compiled from Brookfield (1969) and outlined by Pocock (1973). Neither the framework compiled from Brookfield nor the one outlined by Pocock concentrate on the links between the real world image and behaviour but have different emphases. Brookfield focuses on the basis of decisions and the relationship of the perceived environment to the man-environment relationship as a whole. On the other hand, Pocock's main thrust is a discussion of the structural elements of the image, perceiver and environment.

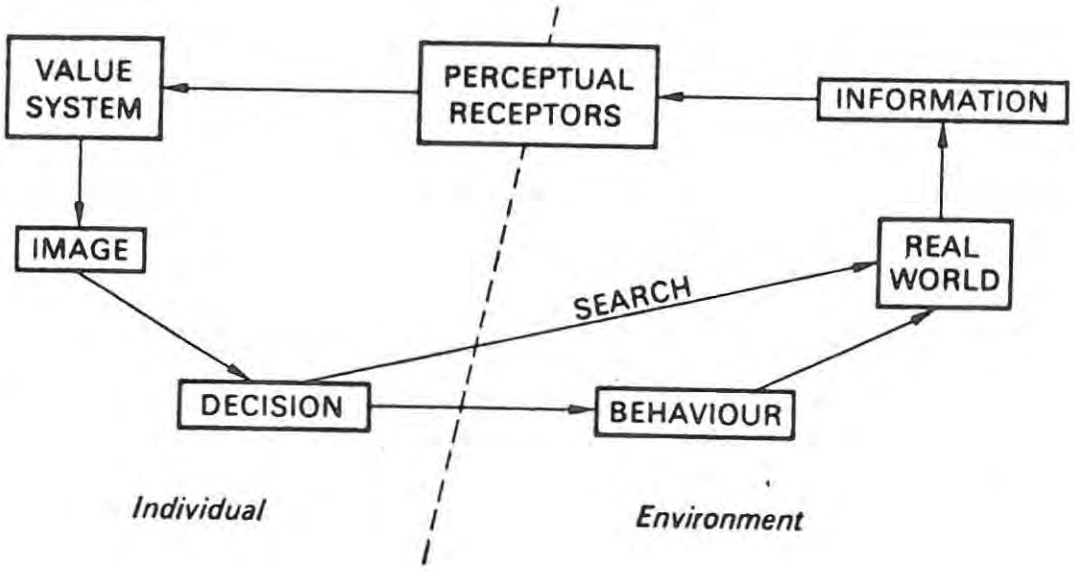



FIGURE 3.1. Conceptual Schema of the Perceptual Process
Source: Downs (1970)

The perceptual approach outlined above, represents information derived from the real world entering the individual via the perceptual receptors and being incorporated into the value system. What emerges is an image of the real world which influences decisions and, therefore, the subsequent behaviour. The decision could result in no behaviour taking place until enough information has been gained. In the case of a lack of information, behaviour is by-passed and the information follows the same process until enough is gained to result in behaviour.

Although the aims of the thesis do not include the use of the framework to trace the perceptual process of each agricultural element listed in Table 3.1, the process has been outlined so that the focus on the image may be seen in context. Downs states that the framework may be entered at any point, and the point of entry of the thesis is that of the image. Although the preoccupation of the research is restricted to the image, it is recognized that the image influences behaviour as shown by the schema. Since images affect behaviour, the first step in accounting for the agricultural practices of the Ciskeians lies in the accurate assessment of their image of agriculture.

Since the image is central to the study, an operational definition is important. A person's perception or image involves at least three aspects: that concerned with description and classification, that concerned with emotional responses, feeling, values, meaning and preference and, finally, the aspect of continuity and pattern beyond simple experience (Pocock, 1973).

Images have also been described as likes, tastes, attitudes and prejudices (English, 1968; Wood, 1970). The image as formulated in this study involves an emotional response, namely a preference or an attitude. As such it is made up of the second and third aspects mentioned by Pocock (1973). The first aspect - the description and classification - was substituted by the agricultural framework. It was felt that the education of the respondents would not be of a high enough standard for them to describe their agricultural system in detail. The image of the people, therefore, is made up of their responses to each element of the agricultural system. The responses take the form of attitudes towards certain elements and a statement of preference for others. For example, the respondents were asked to state whether the rainfall was good, fair or poor (attitude) and were also asked to state preferences for one of the following elements - agriculture, religion, local-level politics and social occasions. The combined attitudes and preferences in relation to all the elements is considered to form the people's image of their agricultural system.

### 3.1.2 Socio-Economic Characteristics

The second aim of the thesis is an attempt to show that the images which people hold are based on socio-economic characteristics, which means that people with differing socio-economic characteristics possibly have different images.

The rationale behind this assertion is outlined below.

The formation of particular images is a complex process. Not only does it take place at, at least four levels, namely individual, community, societal and cultural (Lowenthal, 1961; Murton, 1972), but the image itself is a result of a large number of factors. Important factors on which images are based are as follows: personality, faith, custom, past history, present conditions and future expectations (Lowenthal, 1961; English, 1968; Sonnenfeld, 1969). Since the factors mentioned above are all complex and multi-faceted, more precision is needed in applying them to specific investigations. The choice of socio-economic characteristics by the present study as the basis of image formation, represents a specific facet of the present conditions experienced by the people, mentioned above as an important factor in the composition of an image. The present study has in its support the works of Saarinen (1966), Sonnenfeld (1969) and Pocock (1973). Saarinen gathered background information on, among other things, age, education and farm size, recognizing that these elements affect the perception or image. Sonnenfeld showed that images differed between groups of people of differing age, sex, education and environmental experience to mention a few. Pocock also considers that the characteristics of the people influence the images that they hold, by stating that, "The stable characteristics producing a personal response include the individuals personality attributes, attitudes, social class, age, sex, and so on," (p.253).

The specific characteristics that were chosen were age, education, field size, sex, whether a church member or not and whether previously employed in town. The above six characteristics were chosen on the basis of literature outlining problems in homeland and Ciskeian development. Lombard and Van der Merwe (1972) mention age with reference to the adult male dependency burden. Since most of the economically active males are employed in towns outside the Ciskei, those left behind are either old or young. Some migrants, however, might have returned to their communities. Age, therefore, seems a relevant characteristic to link to the various attitudes. Education is stated as important by almost every book, article and conference paper dealing with homeland development. It therefore requires no further justification for its inclusion. Education brings a broader experience within reach of the individual, and therefore affects his perception of agriculture. Closely related to education is that of being a church member. Since the church is a major transmitter of western culture (Mayer, 1961) it is thought to influence attitudes to agriculture. The importance of field size has already been discussed on page 56 as forming part of the agricultural framework under physical factors. Since the elements of the agricultural framework outlined in Table 3.1, are not easily categorised as falling exclusively under each heading, some could legitimately fall under two headings. For example, the element of 'extension ideas', classified as organizational could also be classified under knowledge factors since an important aspect of extension work is the transmission of information. The actual field sizes elicited from the people are

therefore included as a socio-cultural factor in this context because field size can also be an expression of the social and economic factors of population pressure and land tenure. Related to migrant labour are the aspects of sex division and previous employment in town. Migrancy causes an imbalance of the sex-ratios in the rural areas where the women are often left to care for the entire needs of the family. The different environments experienced by the men (rural and city) as well as the traditional division of labour of the people could cause sex to be a relevant factor in modifying the image of the respondents. Employment in town also affects images because it opens up new possibilities, provides the worker with new skills and an experience of different environments. The extent to which the attitudes and image are related will be examined in the analysis.

While Saarinen (1966), Sonnenfeld (1969) and Pocock (1973) consider socio-economic characteristics to be important, they also mention personality, past history and future expectations as important aspects that produce images. Personality was not considered by this thesis because of two major reasons; the necessary large scale adaptation of the tests to the relevant culture and the time consuming nature of the tests (Edgerton, 1971). While Edgerton does list seventeen tests of personality that have been used cross-culturally, it was beyond the scope of the study to undertake large adaptations to highly specialised psychological tests. Even if adapting the tests would have proved feasible, the length of time added to the interviews by employing them would have been prohibitive. The present study attempted to gain

information about past conditions and the future expectations of the people, but the respondents had difficulty in expressing these clearly, a point to be taken up in greater detail in the discussion of the questionnaire.

While the first step of the investigation involved a description of the image of agriculture and did not rely on the acceptance or rejection of a hypothesis, a hypothesis is needed to evaluate the importance of socio-economic characteristics. The reasons for this are that the formation of images is complex and that images are based on a wide variety of aspects. The hypothesis, on the basis of the above literature, reads as follows:

> there is a link between the socio-economic characteristics of groups of people and their images of, or preference for, the factors of the agricultural framework.

## 3.2 RESEARCH METHOD

The application of the research involved four steps. These were: the choice of the communities, the sampling method, the questionnaire and the method of analysis.

### 3.2.1 The Choice of Communities

The investigation was confined to two semi-subsistence rural communities in the Ciskei, Xengxe and Nyaniso (Figure 3.2). The choice of these particular areas was based on the requirements of a larger study of which this one is a part. Factors influencing the choice were both political and socio-cultural so that the disciplines represented in the study, which included political science, geography, social anthropology, economics and journalism, could be accommodated. The political aspects do not affect the

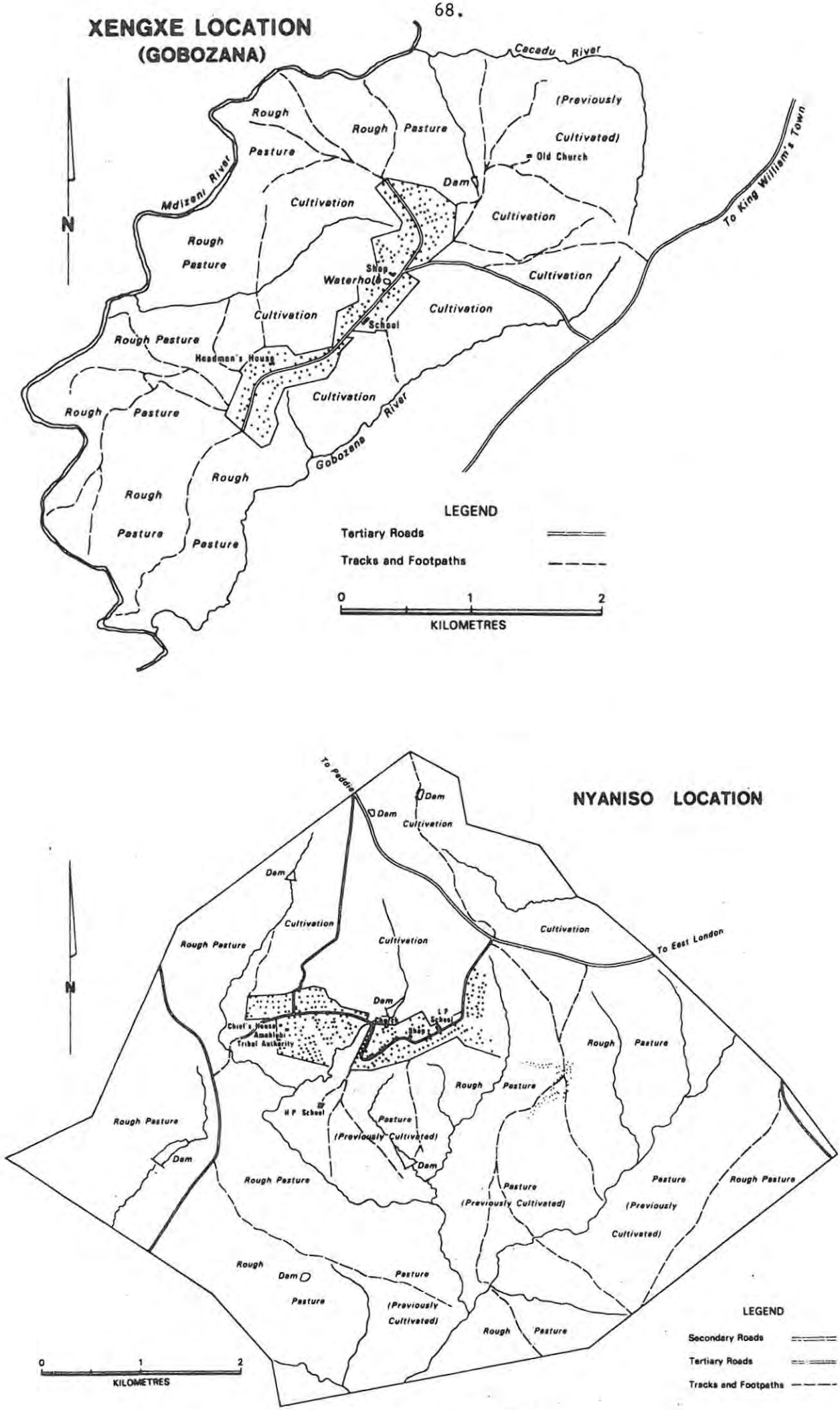



FIG. 3.2. Xengxe and Nyaniso Locations

present study directly whereas the socio-cultural factor upon which the choice was made, namely the 'Red' versus 'School', dichotomy is relevant. 'Red' and 'School' are anthropological terms derived from the people themselves which describe the attitudes of different groups of African people towards westernization. The 'Red' people display traditional attitudes towards dress, schooling, Christianity and externals such as the types of dwellings in which they live, while the 'School' people have adopted western traits (Mayer, 1961; Wilson and Mafeje, 1963). Xengxe represented the more traditional community while Nyaniso was the more western. The classification of Xengxe as 'Red' and Nyaniso as 'School' was based on the distribution mapped by Mayer (1961) and observable differences in dress and dwellings. The majority of the people in Xengxe wore the traditional school clothes made of coarse cloth and lived in mud-and-thatch dwellings, while those in Nyaniso were observed to wear western style clothes and a greater number occupied brick and mortar dwellings with corrugated iron roofs, than those in Xengxe. A detailed comparison of selected aspects reflected by the communities, is tabulated below.

As a result of the general lack of data at a community level, the sources for Table 3.2 are: Ad hoc Committee Reports (1961), Lombard and Van der Merwe (1972) and Benbo (1975). The detailed comparison of field sizes, age, sex division, education, religion and previous employment in town were derived from the questionnaire survey of this present study.

TABLE 3.2. Comparison of Physical Aspects between Communities

| Physical Aspects | Community | |
|---|---|---|
| | Xengxe | Nyaniso |
| 1. Soil type | Sand and Sandy loam | Sand and Sandy loam |
| 2. Soil Fertility | Fair | Fair |
| 3. Gradient of usable fields | 1 in 12 to 1 in 8 | Even ground |
| 4. Maize yields | 2 bags per morgen | 2 bags per morgen |
| 5. Other corps grown | Peas, beans, sorghum, pumpkins and potatoes | Peas, beans, sorghum, pumpkins and potatoes |
| 6. Rainfall | 250-635 mm. | 500-1260 mm. |
| 7. Distance from urban area | 32 kilometers | 4.5 kilometers |

Differences emerge as far as the aspects of gradient, rainfall and distance from the urban area are concerned. Otherwise the communities demonstrate similar characteristics. Actual figures as to the extent to which the other crops beside maize are cultivated, are not available nor are the actual rainfall figures for the two areas. A comparison of the socio-economic characteristics of the heads of households appears below, Table 3.3.

While the characteristics of age and education do not differ to any great extent between the communities, differences in field size and especially sex division, religion and previous employment in town, reveal themselves. The comparison of the two communities presents the context in which the investigation took place, but also affects the method of analysis in that the differences observed, especially with regard to the socio-economic conditions, suggest that different images could emerge from each community.

TABLE 3.3. Comparison of Socio-Economic Characteristics between Communities

| Socio-Economic Characteristics | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Xengxe | | | | | | Nyaniso | | | | | | |
| 1. Age categories in years | | | | | | | | | | | | |
| 20 - 39 | | 40 - 59 | | 60+ | | 20 - 39 | | 40 - 59 | | 60+ | | |
| n | % | n | % | n | % | n | % | n | % | n | % | |
| 9 | 18 | 21 | 42 | 20 | 40 | 10 | 20 | 14 | 28 | 26 | 51 | |
| 2. Educational Categories (school standards passed) | | | | | | | | | | | | |
| 0 - 2 | | 3 - 5 | | 6+ | | 0 - 2 | | 3 - 5 | | 6+ | | |
| n | % | n | % | n | % | n | % | n | % | n | % | |
| 37 | 74 | 9 | 18 | 4 | 8 | 37 | 74 | 10 | 20 | 3 | 6 | |
| 3. Field Size Categories (morgen) | | | | | | | | | | | | |
| 0 | | 1 - 3 | | 4 - 6 | | 7+ | | 0 | | 1 - 3 | | 4 - 6 | | 7+ | |
| n | % | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| 1 | 2 | 48 | 96 | - | - | 1 | 2 | 17 | 34 | 20 | 40 | 12 | 24 | 1 | 2 |
| 4. Sex Division | | | | | | | | | | | | | | | |
| Male | | | | Female | | | | Male | | | | Female | | | |
| n | % | | | n | | % | | n | % | | | n | | % | |
| 37 | 74 | | | 13 | | 26 | | 13 | 26 | | | 37 | | 74 | |
| 5. Church Membership | | | | | | | | | | | | | | | |
| Church member | | | | Non-church member | | | | Church member | | | | Non-church member | | | |
| n | % | | | n | | % | | n | % | | | n | | % | |
| 24 | 48 | | | 26 | | 52 | | 34 | 68 | | | 16 | | 32 | |
| 6. Previous employment in Town | | | | | | | | | | | | | | | |
| Yes | | | | No | | | | Yes | | | | No | | | |
| n | % | | | n | | % | | n | % | | | n | | % | |
| 41 | 82 | | | 9 | | 18 | | 24 | 48 | | | 26 | | 52 | |

### 3.2.2 The Sampling Method

Once the two areas had been chosen, a random sample was undertaken to decide which people should be interviewed. Based on an estimate of the populations, a sample of 50 heads of households in each area was considered adequate. In addition, time and finance constraints limited the number of interviewees to 100 overall. The actual method of generating the sample differed between the two communities. Aerial photographs were available for Nyaniso and the homesteads shown on the photographs were numbered. The fifty households that were finally selected were done so by consulting random number tables. Because aerial photographs were not available for the Xengxe community, the sampling was done in the field. The first homestead was chosen randomly and then every fifth one was included in the sample. By sampling homesteads it was ensured that heads of homesteads or their representatives would be interviewed. This was felt to be important because it meant that the decision-maker of each household, whether male or female, would be the respondent. Hughes (1964) has shown that the best unit of investigation is the household. It forms the economic, political and social unit and "... it would have been wholly unrealistic (if not, in fact, quite impossible) to gather meaningful information relating to such subjects as agricultural activities or stock holdings on an individual basis" (p.121).

### 3.2.3 The Questionnaire

A questionnaire formed the basis for the interview. The sole use of the questionnaire for a social survey has been criticized by Webb et al (1966) and Smith (1975). Webb deals with the question

at length and lists at least nine disadvantages. He cites evidence that findings can be distorted mainly as a result of reactions between the interviewer and person being interviewed, and the construction of the questionnaire. Some of the most important factors related to the respondent are: his awareness of being tested which results in his trying to make a good impression and that he selects a specific role when answering. The interviewer, at the same time, may bias results by helping to structure the responses, by reacting differently to different people and by giving certain cues. Certain interviewer characteristics that can affect findings are also mentioned - personality, race, the approach to and familiarity with the research aims and content. Questionnaire construction has been criticized in terms of the complexity of language used, the questionnaire's conceptual level, different frames of reference and question types. Despite the above criticisms, both Webb (1966) and Smith (1975) stress that interviews remain a most important social-science research technique, and therefore the advantages of the approach must not be lost sight of. In the first instance, Richardson (1965) states that the interview and questionnaire method is one of the few techniques available for the study of attitudes, values, beliefs and motives, which amount to perception (Lowenthal, 1961). Secondly, it is often the only means for finding out the past history of a respondent. Thirdly, the method has a wide applicability and may be applied to any human population except for those with severe physical or mental deficiencies. Fourthly, it standardises data and aids in its analysis. As far as this

specific study is concerned no workable alternative to the questionnaire was found. Faced with very little data at the community level, the remaining option open was to live in each community for an extended period of time. This would have proved impracticable.

The questionnaire used in the study paid particular attention to the above mentioned aspects of language, conceptualization, frame of reference and types of questions. The reason for the fact that language received attention was that the people in the communities were Xhosa-speaking. The choice of interviewers was, therefore, considered crucial. The interviewers who collected the data were chosen for the following reasons: They were also Ciskeians, they were fully bilingual (English and Xhosa) and they were also doing post-graduate research in the related fields of social anthropology and political studies. The above three aspects meant that they were well acquainted with the lifestyle of the people and that they were conversant with research techniques and concepts. In order to standardise the questions asked, the questionnaires (first drawn up in English) were translated into Xhosa by the interviewers. Discussion followed the translation to ensure that the proper meanings were conveyed. The use of the vernacular in the field ensured that the interviewers did not have to translate the questions as they were asking them. The responses, however, were recorded in English by the interviewers so that analysis could proceed without translation. The interviewers encountered no language problems.

Great care was taken with regard to the frame of reference and

conceptual level of the questionnaire. The adoption of the agricultural framework was prompted by the fact that most respondents were expected to be illiterate, a conjecture subsequently confirmed. The use of the framework meant, therefore, that questions could be asked about specific elements and concepts could be made explicity and relevant to the level of education of the people. For example, when investigating social occasions or leisure, the questions concentrated on specific activities such as beer parties and visiting friends and relations. This policy of 'deconceptualization' was employed right through the questionnaire - agriculture was worded as 'cultivating the fields' and the physical factors were divided into three simple aspects of soil fertility, field size, and rainfall. In addition, under economic factors, the division of labour was divided into all the possible combinations (men; women; men, women and children; men and women; women and children; men and children) for each stage of the production cycle which included ploughing, tending and reaping. The elements under knowledge and organizational factors need not be listed since they all appear in Table 3.1.

An evaluation of the questionnaire must initially be based on the fact that it formed less than one-third of a larger questionnaire designed for the interdisciplinary team. The three sections of the questionnaire were designed to elicit responses for three different studies. In the first section, the anthropologist was investigating entrepreneurship and innovation, the second section formed the basis of the present study and the third section was concerned with attitudes towards the mass-media. Although the

three sections were designed in collaboration with all three parties of the research team, the fact that the section of the questionnaire related to this thesis formed part of a wider study meant that certain restrictions were placed upon the length of the section and the type of questions asked. The restrictions were imposed in consideration of the time factor involved in administering the full questionnaire, which after adjustment took on average two hours. The type of questions discouraged were those that probed for reasons and opinions, the type most suited to a perception approach, once again because of time. It must be stated, however, that this investigation drew upon questions in the first section in relation to the socio-economic characterstics of age, education, sex ratio, religion and previous employment in town.

Two broad categories of questions were asked in the section relating to this thesis (after this referred to as the questionnaire) namely, those eliciting perceived responses on the one hand, and those concerned with past conditions and spatial differences on the other. Four types of questions were asked related to the perception category; those that required respondents to rank aspects, those that required alternatives to be chosen, those that elicited yes/no answers and open ended questions. The four types are clearly discernable on the first page of the questionnaire (Appendix B). The questions probing past conditions and spatial differences were of the yes/no and open ended types.

An evaluation of the effectiveness of the questionnaire showed that the questions eliciting perceived responses were answered

more readily than those attempting to elicit conditions over time and space. Difficulties in replying to the latter set of questions (for example, questions 3, 7 and 11) were reported by the fieldworkers. Since the research team could not phrase the questions in a simpler manner and since the questions were considered important because past conditions affect present perceptions, the fieldworkers were asked to perservere and explain that type of question in detail. The quality of the response to these questions remained poor and were finally excluded from the analysis. Other questions with which the respondents experienced difficulty were those related to past labour combinations and possible changes in labour - questions 30 and 32. The problem regarding the responses to the labour combinations, was an inconsistency in the response between the questions. For example, 29 people replied in the negative to question 29 and the following questions which presupposed that the same 29 people would respond, elicited a response greater than that of 29. The reasons for the inconsistencies are difficult to determine but could be related to the number of combinations required to be memorised in question 28 and in order to answer questions 30 and 32. Further questions not included in the analysis dealt with farmers' associations (questions 53 and 54). These were excluded because the associations were inoperative at the time of the survey. The final set of questions with which the respondents experienced difficulty were those of land tenure, questions 56 to 63. The problems seemed to lie in a lack of differentiation between the traditional land tenure system and the relocation of houses and fields undertaken

by the extension service. An example of the lack of differentiation is that of the response to question 63. The question was designed to test the security of tenure that the people experienced, because under the traditional system, the lands could be confiscated by the chief if the person concerned committed a serious offence. The question was interpreted, however, to apply to consolidation moves that the people were forced to make under the new more western type political system. The questions did not anticipate an overlap of the traditional system and more recent consolidation measures because technically the consolidation measures do not violate the traditional tenure system, but merely relocate homesteads and fields. It seems that it is the process of relocation that is uppermost in the minds of the people with regard to the occupation of land. Despite problems related to three sets of questions mentioned above, responses to the other questions proved satisfactory and the questionnaire provided a basis for the analysis, given the restraints placed upon it.

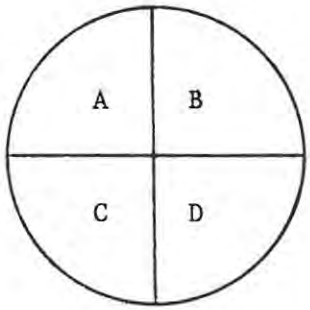
### 3.2.4 Method of Analysis

The method of analysis may be divided into three stages; a description of the image, the comparison of socio-economic characteristics between the groups who held different images and consideration of the implications of the findings revealed by the first two steps. The three stages will be applied at two levels - both communities treated as a unit and then both communities separately.

A step by step outline of the analytic procedure is set out diagrammatically below in Figures 3.3.1 and 3.3.2.

Level 1 (Both Communities treated together)

Fig. 3.3.1




A,B,C,D-groups of people holding certain images or preferences

Steps:

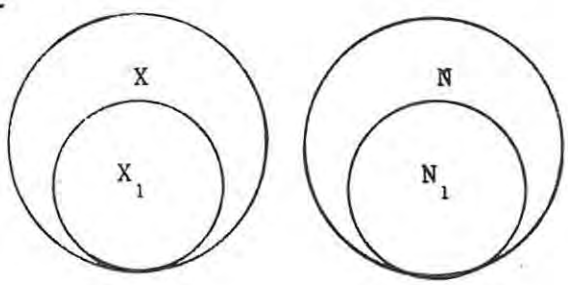
(i) Percentage of each A,B,C,D in comparison to each other.

(ii) Socio-economic characteristics between groups compared directly in an attempt to explain (i).

(iii) Evaluation of (i) and (ii).

Level 2 (Communities treated separately)

Fig. 3.3.2




X - Xengxe sample

N - Nyaniso sample

$X_1$ - respondents in X holding a specific image

$N_1$ - respondents in N holding same image as $X_1$.

Steps:

(i) Comparison of percentages of $X_1$ and $N_1$ of X and N.

(ii) Socio-economic characteristics between $X_1$ and X, and $N_1$ and N compared.

(iii) Evaluation of differences between comparison of $X_1$ and X, and $N_1$ and N in an attempt to explain difference in percentages of $X_1$ and N .

FIGS. 3.3.1 and 3.3.2. Outline of Analytical Procedure

The description of the image involved a percentage response to each element of the agricultural framework. For example, the attitude of the people to either agriculture or employment in town was gauged by the percentage of people responding to those particular elements. The comparison of socio-economic conditions between the groups meant that those who rated agriculture first were compared to those who preferred employment in town in terms of age, education, sex-ratio, field size, religion and previous employment in town. A comparison of socio-economic characteristics hoped to reveal certain trends that could be linked to the preferences.

The socio-economic data were first of all evaluated at the aggregate level of averages and percentages. If the averages were considered to be non-representative of the data set, further analysis was undertaken. The approach involved the grouping of the raw data into categories which were then compared. An example of the categories is found in Table 3.4. Although outlining a link between differences in perception and differences in socio-economic characteristics does not automatically lead to the conclusion that the perception is a result of the socio-economic characteristics, the link suggests that this might be the case.

TABLE 3.4. Example of Socio-Economic Categories

| No. of respondents | Socio-Economic Characteristics | | | | | |
|---|---|---|---|---|---|---|
| | 1. Age Categories in Years | | | | | |
| | 20 - 39 | | 40 - 59 | | 60+ | |
| | n | % | n | % | n | % |
| | | | | | | |
| | 2. Educational Categories (standards passed) | | | | | |
| | 0 - 2 | | 3 - 5 | | 6+ | |
| | n | % | n | % | n | % |
| | | | | | | |
| | 3. Field Size Categories (morgen) | | | | | |
| | 0 | | 1 - 3 | 4 - 6 | 7+ | |
| | | | | | | |

The rationale for choosing the age, educational and field size groupings is discussed below. The age groups were chosen so as to represent young, middle aged and old people. Since the youngest person in the sample was 28 years old, middle-age was said to begin at 40 years (Raum and De Jager, 1972) and the assumption is that anyone over 60 was old, the groupings emerged as in Table 3.4. The educational level of the respondents ranged from no education at all to that of Standard 7. The first grouping was based on the fact that automatic promotion was operative in schools up to Standard 2 (Horrell, 1968). A division between Standard 2 and Standard 3, therefore, seemed meaningful since those characterised by a level of Standard 2 and below can be considered as having a minimal education. The Standard 3 to Standard 5 grouping was

chosen because it incorporated the remainder of the primary school standards. A break between standard 5 and standard 6 was chosen because standard 6 represents the beginning of high school education. The range in field size categories was basically between people having not been allocated land and 6 morgen. The basis of the divisions was made assuming that a critical difference in perception would be made initially, between those who had no land and those who did. Progressive scales were, however, also considered important.

The adoption of the particular socio-economic characteristics meant that the data fell into the nominal and ordinal classifications and, therefore, precluded the use of parametric statistical tests. It was hoped that the chi-squared test and a test involving proportions as outlined by Walpole (1974) could have been used because they represented examples of non-parametric statistics. The chi-squared test was planned to test whether differences in perception as a result of differing socio-economic characteristics were significant, while the test involving proportions was designed to test whether conditions were significantly different between the communities. The nature of the data makes the applicability of the tests suspect. For example, the data with regard to education and field size was low in absolute terms, and comprised a very narrow range. To test these against other larger values in wider ranges could result in unreliable findings. The method of analysis was, therefore, to point to relationships and identify trends by inspection and comparison. The nature of the data also affected the role of the hypothesis. Since statistical tests were not able

to be used, the hypothesis was not tested in terms of the hypothetico-deductive procedure, but was considered the primary orientation or focus around which the analysis would take place. The use of hypotheses as general orientations has been found applicable elsewhere when dealing with tribal societies, an example being Edgerton (1971).

This chapter has been concerned with applying the relevant theory and empirical studies to semi-subsistence agriculture in the Ciskei. The procedure has been outlined above. The applicability and contribution of the perception approach lie in the findings derived from the analytic chapters that follow.

# CHAPTER 4

## PHYSICAL FACTORS

Three aspects, soil fertility, field size and rainfall form the basic physical factors affecting crop yields in the minds of the people. The distance between the fields and the homesteads was also a factor included in the questionnaire, but because of the poor quality of the response, was not included in the analysis. The people experienced some difficulty in assessing distance and this could be an indication that distance is not perceived to be important. By contrast, only one person from the entire sample was unsure about the size of his field.

The three physical aspects were treated in general terms, taking into account that the farmers were peasants and as such would not relate fertility to the chemical composition of the soil. In the same way, their attitude towards rainfall would not be based on detailed knowledge of rainfall figures. Since it was not the purpose of the study to undertake micro-environmental investigations, the attitudes of the farmers to soil fertility and rainfall will be considered in the context of general soil and vegetation characteristics.

The peoples' image or perception of the physical factors is derived from an evaluation of them, i.e. whether the factors are considered adequate or not. An example of a question from the questionnaire with regard to field size, reads as follows; "Are your lands big enough to feed your family?" In investigating the image, soil fertility, field size and rainfall were treated together and not in separate sections. However, in the section of the analysis dealing with the links between the images

and the socio-economic characteristics, as well as the differences between the communities, each element was considered separately. This method of approach means that this chapter differs structurally from Chapters 5 and 6, in which each element is treated separately from the beginning. The structure of the analytical chapters will depend on the factors under consideration and what seems the best arrangement of the data.

## 4.1 THE ADEQUACY OF SOIL FERTILITY, FIELD SIZE AND RAINFALL

### 4.1.1 The Image

Table 4.1 outlines the attitudes of respondents from both communities to the physical factors.

TABLE 4.1. Evaluation of Physical Factors and corresponding Socio-Economic Characteristics for both Communities

| Physical Factors | Respondents | | Socio-Economic Characteristics | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership | Percentage Fertilization |
| A. Soil fertility | | | | | | | | | | |
| 1. Fertile | 57 | 67 | 59 | 2 | 1 | 67 | 51 | 49 | 60 | 35 |
| 2. Infertile | 26 | 33 | 55 | 1 | 2 | 73 | 62 | 38 | 42 | 19 |
| Total | 83 | 100 | | | | | | | | |
| B. Field size | | | | | | | | | | |
| 1. Adequate | 35 | 44 | 61 | 3 | 2 | 74 | 57 | 43 | 63 | 25 |
| 2. Inadequate | 44 | 56 | 56 | 2 | 1 | 66 | 52 | 48 | 50 | 34 |
| Total | 79 | 100 | | | | | | | | |
| C. Rainfall | | | | | | | | | | |
| 1. Good | 8 | 12 | 59 | 3 | 2 | 50 | 25 | 75 | 75 | - |
| 2. Fair | 24 | 36 | 54 | 3 | 1 | 50 | 25 | 75 | 63 | - |
| 3. Poor | 35 | 52 | 59 | 2 | 2 | 81 | 72 | 28 | 49 | - |
| Total | 67 | 100 | | | | | | | | |

67% of the respondents considered the soil to be fertile, while 33% did not. With regard to field size, the majority (56%) considered this to be inadequate to feed their families. 52% of the respondents considered the rainfall to be poor, while 35% considered it to be fair and 12%, good. The impression gained from these figures is that soil fertility is not considered a major handicap to production, but that the people do perceive field size and rainfall as obstacles.

### 4.1.2 Links between responses to Soil Fertility and Socio-Economic Characteristics

Table 4.1.A demonstrates that the difference in average age between the respondents is relatively small, and if these average ages are broken down into categories, the differences are even further diminished. A comparison between the two sets of respondents in relation to their average education did not reveal an important difference, whereas closer analysis of the differences in field size pointed to the following trend. The field sizes of all those who considered the soil to be infertile fell within a field size category of 1-3 morgen. 23% of those who considered their fields to be fertile, on the other hand occupied lands of 4 morgen and above. In general, it appears that the size of the field may have influenced a person's perception of fertility. A difference can also be detected with regard to percentage sex division where the male/female ratios are 51:49 and 62:38 respectively, for those who perceive their soil as fertile and those who do not. Of the people who perceive their soil as fertile, 60% are church members while the percentage is

42 for those who consider the soil infertile. While no important difference emerges between the two groups in relation to their being previously employed in town, the percentage of farmers who apply fertilizer differs by 14% between the two categories of people. The largest percentage of people who apply fertilizer (35%) consider their soil to be fertile, while only 19% of the people who perceive their soil to be infertile apply fertilizer.

The relationships between the physical factors and concomitant socio-economic characteristics of Table 4.1.A carry certain implications. For example, the fact that soil fertility can be linked to field size suggests that fertility is envisaged in terms of greater yields where yields are in turn linked to field size. The perception of adequate soil fertility appears to be linked to the practice of fertilization which at first seems obvious. Whether enough fertilizer or manure is applied, deserves investigation to test if the idea of applying fertilizer makes the fields more fertile. The relationship between the church and the perception of fields as fertile is difficult to explain, but it could relate to the general westernizing influence of the church.

4.1.3 Constrasts between the Communities in relation to Soil Fertility

The difference in number between the respondents of Xengxe and Nyaniso, who perceived their soil to be fertile, was 3 - 27 from Xengxe and 30 from Nyaniso. A greater difference is displayed by the two sets of respondents who consider their soil to be infertile - 22 people from Xengxe and 4 from Nyaniso. Attempts to compare the socio-economic characteristics between the two groups are considered limited because of the low responses from

Nyaniso. The low response from Nyaniso, although hindering analysis, does reveal the large difference that exists between the communities with regard to perception of soil fertility. The fact that 44% of the people from Xengxe perceived the soil to be infertile in comparison to the 8% from Nyaniso, is an important finding. The reason for its importance is that the two communities exhibit different perceptions regarding the soil and any extension programme should take these differences into account.

### 4.1.4 Links between the responses to Field Size and Socio-Economic Characteristics

An inspection of Table 4.1.B did not reveal large differences in socio-economic characteristics between those who perceived their fields to be an adequate size and those who did not. Closer analysis, by breaking down the averages into categories as explained in Chapter 3, did point to the emergence of some trends.

Differences in age between the two groups seemed worth mentioning for the 60+ year bracket only. Of those who considered their fields to be adequate, 57% fall into the 60+ age group, while the equivalent figure for those who perceive their fields to be inadequate was 43%. With regard to the difference in educational standard between the groups, 79% who perceived their fields to be an inadequate size, had an educational level of Standard 2 or below. The equivalent figure for those who perceive their field size to be adequate, was 66%. In addition, 21% of those who considered their fields inadequate had passed Standard 3 while the corresponding percentage of those who had passed Standard 3 and considered their fields to be adequate, was 31%. The trend that

emerges tends to suggest that the higher the educational level, the greater is the tendency to perceive the fields as adequate. If the average field size of the two groups of people is broken down into categories, it is found that 29% of those who perceive their field sizes to be adequate, occupy fields of over 3 morgen in extent. The percentage for those who do not perceive their fields to be adequate and who hold lands of over 3 morgen in extent, on the other hand, is 7%. The sex ratio does not seem related to attitudes towards field size while a difference did emerge with regard to religion. The greatest percentage of church members (63%) perceived their fields to be of adequate size. The 8% difference in people previously employed in town between the two groups of respondents does not warrant comment, whereas the difference in the percentage of people who applied fertilizer does. 25% of those who perceived the extent of their fields to be adequate applied fertilizer, while the percentage of those who applied fertilizer and considered their field size to be inadequate, was 34%.

The characteristics of age, educational standard, field size, religion and the application of fertilizer would appear to be linked to the perceptions on field size. Those who perceive field size as adequate have a greater number of older people than the other group; their educational level is higher, a great number of them had larger plots, they have the greater number of church members and more were previously employed in town. On the other hand, the greatest number of people who applied fertilizer were those who considered their fields to be inadequate to supply

household yields. The relationship between field size and fertilization emerged again with regard to the attitudes towards field size. In this case the greater number of people who applied fertilizer fell into the group who perceived their field sizes as inadequate. The indication is that fewer farmers of the group who perceived field size as adequate, applied fertilizer because the field size was perceived to be adequate in providing for subsistence needs. Fertilization in this case was presumably applied to increase yields which could also be achieved by working a larger field.

### 4.1.5 Contrasts between the Communities in relation to Field Size

Table 4.2 demonstrates that differences emerged between the communities for those who perceived their field size to be adequate and those who did not.

TABLE 4.2. Comparison of Field Size adequacy and the corresponding Socio-Economic Characteristics between the two Communities

| Physical Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Field size perceived as: | | | | | | | | | | |
| 1. Adequate | Xengxe | 21 | 60 | 57 | 1 | 2 | 71 | 67 | 33 | 57 |
| | Nyaniso | 14 | 40 | 67 | 5 | 2 | 71 | 43 | 57 | 71 |
| | Total | 35 | 100 | | | | | | | |
| 2. Inadequate | Xengxe | 25 | 57 | 55 | 1 | 1 | 84 | 80 | 20 | 36 |
| | Nyaniso | 19 | 43 | 56 | 2 | 2 | 42 | 16 | 84 | 63 |
| | Total | 44 | 100 | | | | | | | |

If the people who considered their field sizes to be adequate are treated first, 60% of the respondents were from Xengxe while the percentage from Nyaniso was 40. A more detailed treatment is

found with regard to Table 4.3

TABLE 4.3. Comparison of Socio-Economic Characteristics between Communities for those who perceive Field Size to be adequate

| Respondents / Socio-Economic Characteristics | Field size perceived adequate | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 21 | 42 | 14 | 28 | 50 | 50 |
| Average age (years) | 57 | | 67 | | 56 | 58 |
| Average field size (morgen) | 1 | | 5 | | 1 | 2 |
| Average education (standard) | 2 | | 2 | | 2 | 1 |
| Percentage previously employed in town | 71 | | 71 | | 82 | 48 |
| Sex: percentage - male | 67 | | 43 | | 74 | 26 |
| female | 33 | | 57 | | 26 | 74 |
| Percentage church membership | | | | | | |
| church members | 57 | | 71 | | 48 | 68 |
| non-church members | 43 | | 29 | | 52 | 32 |

In attempting to account for the difference in the number of respondents between the two communities, the differences in average age appear relevant. The average age of the Nyaniso respondents (67 years) was 9 years higher that the average of the Nyaniso sample as a whole and 10 years higher than the average for the Xengxe respondents. The differences in age between the groups become more apparent when the ages are divided into categories. For example, of the 14 Nyaniso respondents who considered their fields to be of adequate size, 79% were over 60 years of age, while the corresponding figures for the Nyaniso sample and the Xengxe respondents were 52% and 45% respectively. Two other differences emerge, average field size and the sex ratio. The respondents from Xengxe who perceived the field size to be adequate, had an average field size of 1 morgen while those of Nyaniso had an average of 5 morgen. While the average field

size of 1 morgen for the Xengxe respondents is similar to the average of the Xengxe sample, the average of 5 morgen for the respondents of Nyaniso is 2,5 times as great as for the Nyaniso sample. In order to evaluate the aggregate differences more accurately, the field sizes of the Nyaniso respondents and the Nyaniso sample were divided into categories. Of the respondents from Nyaniso, 64% worked lands between 4 and 6 morgen, while the equivalent figures for the Nyaniso sample was 36%. The differences in field size therefore remain important.

While the link with regard to age and perceived inadequacy of the fields is difficult to explain, the attitudes linking field size adequacy and actual field size suggest that Nyaniso has less of an agricultural bias than Xengxe. The greater average field size held by the Nyaniso respondents in comparison to the Xengxe respondents (5 morgen in comparison to 1 morgen), suggests greater production levels and better management on the part of the Xengxe respondents.

The majority of both Xengxe and Nyaniso respondents perceived their fields to be of an inadequate size. In the case of Xengxe this figure was 25 out of 46, while for Nyaniso it was 19 out of 33 (Table 4.2). The socio-economic characteristics of the Xengxe respondents were similar to the Xengxe sample as a whole, Table 4.4, and no differences between the two that relate to the perceived inadequacy of the field size, were apparent.

The major difference that emerged between the Nyaniso respondents who perceived their field size inadequate and the overall sample

drawn from Nyaniso was that of the sex ratio which showed a 10% decrease in males among the respondents. This 10% decrease in the male population suggests that different perceptions could be related to the male/female composition of the people.

TABLE 4.4. Comparison of Socio-Economic Characteristics between Communities for those who perceive the Field Size inadequate

| Socio-Economic Characteristics \ Respondents | Field size perceived inadequate | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 25 | 50 | 19 | 38 | 50 | 50 |
| Average age (years) | 55 | | 56 | | 56 | 58 |
| Average field size (morgen) | 1 | | 2 | | 1 | 2 |
| Average education (standard) | 1 | | 2 | | 2 | 1 |
| Percentage previously employed in town | 84 | | 42 | | 82 | 48 |
| Sex: percentage - male | 80 | | 16 | | 74 | 26 |
| female | 20 | | 84 | | 26 | 74 |
| Percentage church membership | | | | | | |
| church members | 36 | | 63 | | 48 | 68 |
| non-church members | 64 | | 37 | | 52 | 32 |

The links suggesting the two statements, that Nyaniso displays less of an agricultural bias than Xengxe and that the male/female composition could affect the image, are admittedly tenuous at this stage. Their acceptance will depend on whether similar patterns recur in other sections of the analysis.

### 4.1.6 Links between responses to Rainfall and Socio-Economic Characteristics

In assessing attitudes towards rainfall, age and educational standard do not seem to be linked to the categories of good, fair and poor (Table 4.1.C). Trends can be seen, however, when the average field size among the groups is divided into categories as in Table 4.5.

TABLE 4.5. Field Size Categories for responses to Rainfall in both Communities

| Physical Factors | No. of Respondents | Socio-Economic Characteristics | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Field size categories (morgen) | | | | | | | |
| Rainfall | | 0 | | 1-3 | | 4-6 | | $7^+$ | |
| | | n | % | n | % | n | % | n | % |
| 1. Good | 8 | 1 | 12 | 3 | 38 | 4 | 50 | - | - |
| 2. Fair | 24 | 1 | 4 | 17 | 71 | 5 | 21 | 1 | 4 |
| 3. Poor | 53 | 1 | 2 | 47 | 89 | - | - | 5 | 9 |

The category that deserves particular attention is that of the 1-3 morgen field size. The reason for the focus on this specific category is that the majority of the people worked fields between 1-3 morgen in extent. Three people (38%) of those who rate the rainfall as good have fields between 1 and 3 morgen. The percentage of people working lands of this size increases to 71% for those who consider the rainfall to be fair and to 89% for those who rate the rainfall as poor. The opposite trend can be observed for the 4-6 morgen field size category. The inference drawn from Table 4.5 is that field size is linked to attitudes about rainfall. The trend observed for the $7^+$ morgen category is slightly suspect because of the low number of responses, except for the section dealing with the people who perceive the rainfall to be poor.

A large difference in the sex ratio (72% males : 28% females) between those who perceive the rainfall to be poor and the other groups is also observed in Table 4.1.C. With regard to religion, those who perceive the rainfall to be poor are the only group with a church member minority. The same group had 81% of its respondents previously employed in town in comparison to the 50% of the other two groups.

Links between the socio-economic characteristics and the perception of rainfall can be observed with regard to field size, but more particularly to sex ratio, religion and previous town employment. The relationship between those who consider the rainfall poor and the high percentage of those people (89%) who worked fields of between 1 and 3 morgen (Table 4.5), suggests that the perception of poor rainfall is linked to small field sizes. No immediate explanation for the relationship emerges, but rainfall and field size could be intimately connected to yields in the minds of the people. For example, if the people are preoccupied with the size of the yield, and yields are a result of rainfall and field size, those with larger fields who experience larger total yields, perceive the rainfall to be adequate. Those with smaller fields who do not produce much food, perceive the rainfall to be poor. Rainfall and field size could be linked in the minds of the people by a consideration of the amount of food produced. The large difference in male/female ratios between those who considered the rainfall good and fair and those who considerd it poor, raises the question as to which sex's image is the most realistic, and in a broader context, which sex is most sensitive to conditions affecting their livelihood. Few conclusions can be drawn from a 49% church member minority in relation to the perception of rainfall as poor, but the 81% of this group who had been previously employed in town, raises the point of sensitivity to agriculture again. The high percentage of those previously employed in town is presumably linked to the high proportion of males in group 3 (Table 4.1.C) who perceive the rainfall to be poor. The question is raised as to whether employment in town has affected their evaluation of rainfall negatively.

### 4.1.7 Contrasts between the Communities in relation to Rainfall

Table 4.6 shows that no respondents from Xengxe considered the rainfall to be good, while people from Nyaniso did. A similar trend is shown for the respondents who considered the rainfall to be fair, because 28% of them resided in Xengxe while 75% were from Nyaniso. With regard to the perception of rainfall as poor, the percentages for Xengxe and Nyaniso were 83 and 17 respectively. The fact that the majority of the Xengxe respondents considered the rainfall to be poor is not unexpected, because the average rainfall figure p.a. for Xengxe is estimated at between 250-365 mm. The rainfall estimate for Nyaniso, on the other hand, is between 500-1260 mm.

TABLE 4.6. Comparison of Attitudes towards Rainfall and Corresponding Socio-Economic Characteristics between the two Communities

| Physical Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Rainfall perceived as: | | | | | | | | | | |
| 1. Good | Xengxe | 0 | - | - | - | - | - | - | - | - |
| | Nyaniso | 8 | 100 | 59 | 3 | 2 | 50 | 25 | 75 | 75 |
| | Total | 8 | 100 | | | | | | | |
| 2. Fair | Xengxe | 6 | 25 | 49 | 3 | 2 | 83 | 67 | 33 | 67 |
| | Nyaniso | 18 | 75 | 55 | 3 | 1 | 39 | 11 | 91 | 61 |
| | Total | 24 | 100 | | | | | | | |
| 3. Poor | Xengxe | 44 | 83 | 57 | 1 | 2 | 82 | 75 | 25 | 43 |
| | Nyaniso | 9 | 17 | 68 | 4 | 2 | 78 | 56 | 44 | 78 |
| | Total | 53 | 100 | | | | | | | |

Table 4.7 summarises the results for the respondents who perceive rainfall to be good. The comparison between the Nyaniso respondents and the Nyaniso sample yielded two differences - average

field size and average education. While the differences appear negligible at the aggregate level, further analysis by dividing the figures into categories reveals differences that could well be linked to the consideration of the rainfall as good. Of the 8 respondents, 4 had larger fields (4 morgen and above) and 4 had an education of Standard 3 and above.

TABLE 4.7. Comparison of Socio-Economic Characteristics between Communities for those who perceive Rainfall to be good

| Respondents / Socio-Economic Characteristics | Rainfall perceived as good | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | - | - | 8 | 16 | 50 | 50 |
| Average age (years) | - | | 59 | | 56 | 58 |
| Average field size (morgen) | - | | 3 | | 1 | 2 |
| Average education (standard) | - | | 2 | | 2 | 1 |
| Percentage previously employed in town | - | | 50 | | 82 | 48 |
| Sex: percentage - male | - | | 25 | | 74 | 26 |
| female | - | | 75 | | 26 | 74 |
| Percentage church membership | | | | | | |
| church members | - | | 75 | | 48 | 68 |
| non-church members | - | | 25 | | 52 | 32 |

Although the number of respondents is small, preventing firm conclusions, the fact that a difference did emerge between the groups with regard to field size reinforces the link between rainfall and field size already mentioned, where increased rainfall and increased field size could each lead to better yields. An explanation for the higher level of education affecting the perception of the adequacy of rainfall of the Nyaniso respondents, cannot be given.

A consideration of those who perceived rainfall to be fair as well as their corresponding socio-economic characteristics is

exhibited by Table 4.8.

TABLE 4.8. Comparison of Socio-Economic Characteristics between Communities for those who perceive Rainfall to be fair

| Respondents / Socio-Economic Characteristics | Rainfall perceived as fair | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 6 | 12 | 18 | 36 | 50 | 50 |
| Average age (years) | 49 | | 55 | | 56 | 58 |
| Average field size (morgen) | 3 | | 3 | | 1 | 2 |
| Average education (standard) | 2 | | 1 | | 2 | 1 |
| Percentage previously employed in town | 83 | | 39 | | 82 | 48 |
| Sex: percentage - male | 67 | | 9 | | 74 | 26 |
| female | 33 | | 91 | | 26 | 74 |
| Percentage church membership | | | | | | |
| church members | 67 | | 61 | | 48 | 68 |
| non-church members | 33 | | 39 | | 52 | 32 |

If the characteristics of the Xengxe respondents are compared to the overall sample characteristics of that community, two differences emerge, those of age and those of percentage church membership. The difference in field size observable between the two Xengxe groups, is not considered meaningful since closer analysis showed the average of 3 morgen to be unrepresentative of the size of fields held by the individual farmers. The lower average age by 6 years of the Xengxe respondents in comparison to the Xengxe sample is further outlined if the ages of the two groups are divided into categories. The respondents from Xengxe exhibited an even spread of 2 people (33%) in each of the age categories (20-39, 40-59 and 60+) while the Xengxe sample evidenced higher proportions, viz. 8 people (44%) and 7 people (38%) in the two older age group categories. The other difference, that of church membership, showed that the Xengxe respondents had a 67%

church membership whereas that of the Xengxe sample was 48%. The manner in which the above differences are linked to the perception of the rainfall as fair is not clear.

A comparison of the Nyaniso respondents and the Nyaniso sample also reveals two differences in their characteristics at an aggregate level, namely field size and the sex ratio. If the average field sizes are divided into categories, the respondents of Nyaniso have 1 person without a field and 12 (67%) of them having fields between 1 and 3 morgen. Of the Nyaniso sample as a whole, 34% had no fields and 40% had fields between 1 and 3 morgen. The differences in the larger field size categories were minimal between the two groups under consideration. The respondents showed a male/female ratio of 11:91 in comparison to the sample whose ratio was 26:74.

The differences that emerge between the communities relate to four aspects; age, church membership, field size and sex ratio. The decrease in age and increase in church membership displayed between the Xengxe respondents in comparison to the Xengxe sample was not evidenced in a comparison of the Nyaniso groups. In addition,the links between the differences in age and church membership to the perception of rainfall as fair are not clear and possibly the result of a small response from Xengxe. On the other hand, the increase in field size and the decrease in the proportion of males exhibited by the Nyaniso respondents in comparison to the Nyaniso sample was not observed when the two Xengxe groups were compared. The increased field sizes worked by the Nyaniso respondents and their relationship to the perception of

rainfall has already been discussed and tends to reinforce the previous statement in this regard - that Xengxe has a greater agricultural bias than Nyaniso. A decrease of 15% in the male population and a corresponding increase in the female population cannot be accounted for, for those who perceive the rainfall as adequate. The difference is observable, nevertheless. A comparison of the two sets of respondents reveals one major difference, that of the sex ratio in which the male/female ratio for the Xengxe respondents is 67:33 and that of the Nyaniso respondents 11:91. Whether this difference explains the difference in the percentage of those who perceived the rainfall to be fair, is uncertain.

The final aspect to be investigated under physical factors is that of the people who perceived the rainfall to be poor. Details of this group by community are listed in Table 4.9.

TABLE 4.9. Comparison of Socio-Economic Characteristics between Communities for those who perceive the Rainfall to be poor

| Socio-Economic Characteristics \ Respondents | Rainfall perceived as poor | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 44 | 88 | 9 | 18 | 50 | 50 |
| Average age (years) | 57 | | 68 | | 56 | 58 |
| Average field size (morgen) | 1 | | 4 | | 1 | 2 |
| Average education (standard) | 2 | | 2 | | 2 | 1 |
| Percentage previously employed in town | 82 | | 78 | | 82 | 48 |
| Sex: percentage - male | 75 | | 56 | | 74 | 26 |
| female | 25 | | 44 | | 26 | 74 |
| Percentage church membership | | | | | | |
| church members | 43 | | 78 | | 48 | 68 |
| non-church members | 57 | | 22 | | 52 | 32 |

The differences between the Xengxe respondents and the Xengxe sample are minimal seeing that the respondents in this case make up 88% of the sample. The same cannot be said for the Nyaniso respondents in their comparison with the Nyaniso sample, because differences appear in all six socio-economic characteristics under consideration. The first is that of age, where the average is 68 years for the respondents for the particular question and 58 for the sample as a whole. The difference is underlined when the percentages are divided into categories. It was found that 7 (78%) of the Nyaniso respondents were over 60 years of age while only 52% fall into the same category for the Nyaniso sample as a whole. The two morgen difference in average field size is also substantiated by dividing the field sizes worked by the respondents and the sample into categories. Of the Nyaniso respondents, 5 (56%) worked fields of between four and six morgen whereas the corresponding figure for the sample was 24%. In addition none of the respondents were without fields, but 34% of the sample did not have fields. A division into categories of the average educational standard passed between the two groups also displayed a difference - 5 (56%) of the respondents having an educational level of between no education and Standard 2, and 4 (44%) having passed Standards 3-5. The equivalent figures for the Nyaniso sample were 74% and 22%. The respondents also demonstrated an increase of 30% of people who were previously employed in town, an increase of 30% in the ratio of males to females and a 20% decline in church membership in comparison to the overall sample. The greater age displayed by the respondents could be linked to the perception of the rainfall as poor because of an inability

to produce the yields that a younger population may achieve. This idea is underlined by one of the respondents who stated in response to the question of how could more food be produced: "Most of us are old and it is not worth starting anything new." The differences in field size, educational level, percentage previous employment in town, percentage sex ratio and percentage church membership are difficult to account for.

Investigations into the attitudes towards rainfall revealed field size, the sex ratio and age to be linked most strongly to the differing perceptions. The greater the field size the greater number of people perceiving the rainfall to be adequate and the greater the percentage of males in Nyaniso the more positive were the peoples' attitude towards the rainfall. The above links do not hold for those who perceived the rainfall to be poor (Table 4.9). In this case the average field size and percentage of males was larger for the Nyaniso respondents than for the Nyaniso sample as a whole. The anomalies displayed by the people of Nyaniso also perceived the rainfall to be poor could be the result of the small number of responses which totalled 9. In addition, the fact that the differences in field size, educational standard, previous employment in town, sex ratio and church membership between the Nyaniso respondents and the Nyaniso sample, could not be explained, could be the result of the complexity of the basis on which perceptions are made. It could be that the socio-economic characteristics under consideration provide too simple a base for the perceived adequacy/inadequacy of the rainfall.

## 4.2 DISCUSSION OF FINDINGS

The perception of the people in terms of the adequacy of the physical factors for agriculture, showed that soil fertility was not a limiting factor in the minds of the majority of the population. The opposite was true of their evaluation of field size and rainfall. The perception of the people in terms of field size and rainfall was considered fairly accurate since the size of the fields held by 90% of the population of the Ciskei is small in absolute terms (Sebe, 1974). In addition, the rainfall figures for the regions into which the two communities fall were estimated as 250-635 mm and 500-1350 mm for Xengxe and Nyaniso respectively - see Table 3.2. These figures reflect a comparatively low rainfall for regions of arable farming, especially in the case of Xengxe.

Various links between the perceptions and socio-economic characteristics were observed. The more important ones are summarised below in Table 4.10.

TABLE 4.10. Links Between Physical Factors and Socio-Economic Characteristics

| Physical Factors | Socio-Economic Characteristics |
|---|---|
| Adequacy of: | |
| A. Soil fertility | Field size, fertilization of the fields |
| B. Field size | Educational standard, fertilization of the fields |
| C. Rainfall | Field size, employment in town |

The links illustrated in Table 4.10 together with the less important ones mentioned in the text, support the hypothesis, that links exist between the image held by a group of people and the corresponding socio-economic characteristics reflected by them. As explained in Chapter 3, the nature of the data precludes any formal

rejection or acceptance of the hypothesis. Also, in keeping with the overall framework of the research and bearing in mind that the thesis represents a pilot study, the investigation concentrated on pointing out the existence of the links.

The contrasts between the communities pointed to differences of perception. The major contrasts were for example, that 44% of the respondents from Xengxe perceived the soil to be infertile, while the equivalent figure for Nyaniso was 8%. In addition, 36% of the respondents from Nyaniso perceived the rainfall to be fair in comparison to the 12% response from Xengxe. Of those who perceived the rainfall to be poor, 88% were from Xengxe while 18% were from Nyaniso.

The limitations of field size and rainfall in the minds of the people are important foci for the improvement of agriculture by extension and development agencies. In addition, the major links between the images and the socio-economic characteristics could help pin-point more specific conditions. For example, if the perception of the adequacy of soil fertility is linked to field size, this aspect could be recognized and presumably remedied. Differences between communities need also to be recognized and planned for accordingly. A further contribution of this chapter lies in merely having isolated the physical constraints that the people feel. In this case the agricultural potential within the field size and rainfall constraints could be demonstrated and explained to the people. In these ways the people might be helped to improve their agricultural output within the limits set by the physical constraints.

While physical constraints do excercise a considerable influence on subsistence farming, just as important are the social and cultural aspects which have a bearing on agriculture. The following chapter on socio-cultural factors tends to deal with the more human aspects of agriculture.

# CHAPTER 5

## SOCIO-CULTURAL FACTORS

The socio-cultural factors that form the basis of the chapter are religion, social occasions, local-level politics, the importance of cattle, and employment in town. The reasons for selecting these elements were outlined in Chapter 3 and the aim was to determine their relative importance in relation to the main agricultural activity of cultivating the fields. The above elements, form an integral part of the agricultural system, are aspects that affect production as well as the performance of the agricultural sector as a whole. For example, the actual cultivation of the fields could be neglected in favour of the associated social occasions, political meetings, preoccupation with cattle and employment in town.

The five socio-cultural factors were treated in three stages. In the first instance the people were asked to state a preference for one of the following; agriculture, social occasions, church and local-level politics. In the second instance the people were asked to express a preference for agriculture or cattle, and thirdly, the alternative offered them were agriculture and employment in town. The aspects were dealt with as three distinct entities because of the nature of the socio-cultural factors themselves. For instance, the aspect of cattle held a special place in the traditional economy of the people (Herskovits, 1962) and therefore deserved analysis in its own right. The attitude of the people towards employment in town was also treated separately because unlike the other socio-cultural factors it represents an alternative to agriculture.

## 5.1 PREFERENCES FOR AGRICULTURE, THE CHURCH, SOCIAL OCCASIONS, AND LOCAL-LEVEL POLITICS

### 5.1.1 The Image

Table 5.1 reveals that 46 of the 88 respondents considered agriculture to be their chief preference. The church figures prominently in the minds of the people, with 21 people considering it the most important, while social occasions and local-level politics were ranked first by 11 and 10 people respectively.

TABLE 5.1. Preference and Characteristics of the first Set of Socio-Cultural Factors in both Communities

| Socio-Cultural Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage | | Percentage church membership |
| | | | | | | | M | F | |
| Preference for: | | | | | | | | | |
| 1. Agriculture | 46 | 52 | 54 | 2 | 1 | 66 | 59 | 41 | 43 |
| 2. Church | 21 | 24 | 55 | 2 | 3 | 69 | 52 | 48 | 86 |
| 3. Social occasions | 11 | 13 | 70 | 2 | 0 | 20 | 18 | 82 | 55 |
| 4. Local-level politics | 10 | 11 | 58 | 2 | 1 | 30 | 70 | 30 | 40 |
| Total | 88 | 100 | | | | | | | |

In discussing the preferences, three aspects deserve closer consideration. Firstly, although agriculture is ranked first by 46 of the 88 respondents, the response seems low for a population which depends on agriculture a great deal. This finding suggests an indifferent attitude towards agriculture because 48% of the people, although rural in nature and dependent on cultivation, note other aspects above agriculture. Secondly, the low response to local-level politics (10 of the 88 people) appears to reveal a negative aspect of rural life, since at the villige committee

meetings, every adult male is entitled to express his view on the welfare of the community. Thirdly, in contrast to the response towards local-level politics, the church was rated first by 24% of the respondents and as such seemed to play a relatively important role in the communities.

5.1.2 Links between Preferences and Socio-economic Characteristics

Whereas there seems no difference in educational standards between those who perceived agriculture as important and those who favoured local level politics, Table 5.1 shows that the education standards in categories 2 and 3 (i.e. church and social occasions) might well be important. Those who perceived church as the most important had an average education of Standard 3 with 57% having an education of higher than Standard 3. Those who perceived social occasions to be important had an average of no education at all. Only one respondent in this group stated that she had passed Standard 2. Links between the average ages and different preferences do not seem to show except when the average age is linked to those who have a preference for social occasions. This average age of 70 years is comprised of ten people who are over 60 years of age and only one who was 32 years old. The field size occupied and worked by people does not seem linked to their preferences if only the averages are taken into account. If broken down into categories, however, some trends can be observed (Table 5.2).

TABLE 5.2. Field Size categories in relation to Socio-Cultural Preferences

| Socio-Cultural Factors | Socio-Economic Characteristics | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Field size categories (morgen) | | | | | | | | | |
| | 0 | | 1-3 | | 4-6 | | 7+ | | Total | |
| Preference for: | n | % | n | % | n | % | n | % | n | % |
| Agriculture | 4 | 9 | 38 | 83 | 3 | 7 | 1 | 2 | 46 | 100 |
| Church | 8 | 38 | 4 | 19 | 8 | 38 | 1 | 5 | 21 | 100 |
| Social Occasions | 3 | 27 | 3 | 27 | 5 | 45 | - | - | 11 | 99 |
| Local-level politics | 1 | 10 | 8 | 80 | - | - | 1 | 10 | 10 | 100 |

For example, those who favour the church and those who favour social occasions have the highest percentage of people who have not been allocated land. By constrast, field sizes for those who prefer local-level politics and agriculture have a high proportion of their lands falling into the 1-3 morgen category. Those who favour church and social occasions, on the other hand, have a relatively high proportion of their lands falling into the 4-6 morgen bracket.

While it is to be expected that those who rate the church first would have a high proportion of people being church members, Table 5.1, the only other group that demonstrated a church member majority (55%) was the one which preferred social occasions.

Differences in sex division in Table 5.1, are related to those who favoured social occasions and those who rated local-level politics first. Of the 11 people who had a preference for social occasions, 9 (82%) were female, and of the 10 who perceived local-level politics to be important, 7 were male. The final links that emerged were related to the percentage of people previously employed in town. In this case both those who rated

agriculture first and those who rated the church first, showed a majority of people who had been previously employed in town - 66 and 67% respectively. The people who preferred social occasions and local-level politics, on the other hand, had 20 and 33% of their groups previously employed in town.

The people holding different preferences were seen to exhibit different socio-economic characteristics. The most distinct group were those who rated social occasions first. Table 5.1 shows that they had the lowest educational standard, the highest average age, a large percentage of church members, the highest percentage of women of any group and the lowest percentage of people previously employed in town. Age plays a large role in the preference of this group because information volunteered by them revealed that they considered themselves too old and, in some cases, too ill to cultivate.

### 5.1.3 Contrasts between the two Communities

The contrasts in image between the two communities and the associated socio-economic characteristics form an important part of the study as has been discussed earlier. The line of analysis is as follows: Different percentage responses will be commented upon to highlight different perceptions between the communities. The responses will be compared to their equivalent overall sample characteristics. If differences are observed between the sets of responses in comparison to the overall characteristics, it is inferred that the perception or attitude is linked to the socio-economic characteristics displayed by the respondents to that particular question. The percentage response and socio-economic

characteristics between the communities are outlined in Table 5.3 below.

TABLE 5.3. Comparison of Socio-Cultural Factors and corresponding Socio-Economic Characteristics between the two Communities

| Socio-Cultural Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Preference for: | | | | | | | | | | |
| 1. Agriculture | Xengxe | 31 | 67 | 56 | 1 | 1 | 77 | 74 | 26 | 39 |
| | Nyaniso | 15 | 33 | 52 | 2 | 2 | 40 | 27 | 73 | 60 |
| | Total | 46 | 100 | | | | | | | |
| 2. Church | Xengxe | 11 | 52 | 52 | 1 | 3 | 82 | 55 | 45 | - |
| | Nyaniso | 10 | 48 | 61 | 3 | 2 | 80 | 50 | 50 | - |
| | Total | 21 | 100 | | | | | | | |
| 3. Social occasions | Xengxe | 0 | - | - | - | - | - | - | - | - |
| | Nyaniso | 11 | 100 | 70 | 3 | 0 | 36 | 18 | 82 | 55 |
| | Total | 11 | 100 | | | | | | | |
| 4. Local-level politics | Xengxe | 7 | 70 | 60 | 1 | 1 | 86 | 86 | 14 | 29 |
| | Nyaniso | 3 | 30 | 55 | 5 | 1 | 33 | 33 | 67 | 67 |
| | | 10 | 100 | | | | | | | |

With regard to those who rate agriculture first, 67% reside in the Xengxe community and 33% in Nyaniso. Approximately the same number of people in each community rate the church first, while those who perceived social occasions to be important were exclusively Nyaniso residents. A higher degree of participation in local-level politics was recorded by Xengxe. The impression gained on the bases of these findings is that Xengxe is the more agriculturally oriented of the two communities, since the number of people who rated agriculture first was more than double the number from Nyaniso.

Table 5.4 gives the responses of the people in each community who rate agriculture first, and their corresponding socio-economic

characteristics. The percentage of respondents in the sections dealing with comparisons between the respondents and the overall sample characteristics is a reflection of the total sample from each community and not a percentage of the total number of responses to a question. For example, Table 5.4 shows that of the people who prefer agriculture, 31 reside in Xengxe. The percentage given is 62, 31 being 62% of 50 - the total sample drawn from Xengxe. The reason for the perceptions being a reflection of the community samples, is that comparisons are made between the socio-economic characteristics of the respondents and the community samples.

TABLE 5.4. Comparison of Socio-Economic Characteristics between Communities for those who rate Agriculture first

| Socio-Economic Characteristics \ Respondents | Preference for Agriculture | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 31 | 62 | 15 | 30 | 50 | 50 |
| Average age (years) | 56 | | 52 | | 56 | 58 |
| Average field size (morgen) | 1 | | 2 | | 1 | 2 |
| Average education (standard) | 1 | | 2 | | 2 | 1 |
| Percentage previously employed in town | 77 | | 40 | | 82 | 48 |
| Sex: percentage - male | 74 | | 27 | | 74 | 26 |
| female | 26 | | 73 | | 26 | 74 |
| Percentage church membership | | | | | | |
| church members | 39 | | 60 | | 48 | 68 |
| non-church members | 61 | | 40 | | 52 | 32 |

The percentage of people from Xengxe who rated agriculture first was 62, whereas the figure for Nyaniso was 30%. When the characteristics of the respondents were compared to the characteristics of their respective communities as a whole, two trends appeared. These were related to the socio-economic characteristics,

percentage previous employment in town, and church membership. In both cases the percentages recorded by the respondents were less than those exhibited by the community as a whole. The percentage for the Xengxe respondents with regard to previous employment in town was 77 while the percentage for the Xengxe community was 82. The equivalent figures for the Nyaniso respondents in comparison to the Nyaniso community was 40:48. A 21% decrease was exhibited by the Xengxe respondents with regard to church membership when compared to the Xengxe community and the corresponding figure for Nyaniso was 20%. These decreases in percentage of people previously employed in town and church members seem linked to a preference for agriculture. The relationship seems logical, since those who favour agriculture, presumably rate it above employment in town and the decline in church membership reflects conditions in Table 5.1 where those who favoured agriculture had a minority church membership. While the above finding suggested an agricultural bias on the part of both sets of respondents, no explanation from Table 5.4 could be given for the fact that 16 (24%) more people rated agriculture first in Xengxe. Therefore, while there is a difference with regard to the attitude towards agriculture between the respondents of Xengxe and Nyaniso, this difference does not seem to be based on differences in socio-economic characteristics.

Table 5.5 outlines the percentage response and the socio-economic characteristics of the respondents in the two communities who rate church first. The difference in the perception of church as the most important socio-cultural factor is minimal between

the communities. In addition, differences in socio-economic characteristics were small and only two deserve mention. The first is the 32% increase in previous employment in town demonstrated by the Nyaniso respondents in relation to the Nyaniso community. It seems therefore that in Nyaniso, preference for the church is linked to previous employment in town. Of greater significance is the finding that a preference for the church tends to be related to an equalising of the sex ratios. Table 5.5 shows that the male/female ratios for the Xengxe and Nyaniso respondents were 55:45 and 50:50, while those of the communities as a whole were 74:26 and 26:74 respectively. Reasons for the above two findings are not clear.

TABLE 5.5. Comparison of Socio-Economic Characteristics between Communities for those who rate Church first

| Socio-Economic Characteristics \ Respondents | Preference for the Church | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 11 | 22 | 10 | 20 | 50 | 50 |
| Average age (years) | 52 | | 61 | | 56 | 58 |
| Average field size (morgen) | 1 | | 3 | | 1 | 2 |
| Average education (standard) | 3 | | 2 | | 2 | 1 |
| Percentage previously employed in town | 82 | | 80 | | 82 | 48 |
| Sex: percentage - male | 55 | | 50 | | 74 | 26 |
| female | 45 | | 50 | | 26 | 74 |

Table 5.6 outlines the socio-economic characteristics for those who rated social occasions first. Response to social occasions showed the widest discrepancy between communities because all the respondents were part of the Nyaniso location. If the socio-economic characteristics of the respondents are compared to the

overall community characteristics of Nyaniso, differences emerge for five of the six socio-economic characteristics. The average age difference was 12 years, with 10 of the 11 respondents who preferred social occasions being over 60 years of age. The educational level of the respondents was nil, the percentage previous employment in town was 12% lower, the respondents had 8% more females and the percentage church membership was 13% lower. The average field size of the respondents in comparison to that of the overall sample was not considered important.

TABLE 5.6. Comparison of Socio-Economic Characteristics between Communities for those who rate Social Occasions first

| Socio-Economic Characteristics / Respondents | Preference for Social Occasions | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 0 | - | 11 | 22 | 50 | 50 |
| Average age (years) | | | 70 | | | 58 |
| Average field size (morgen) | | | 3 | | | 2 |
| Average education (standard) | | | 0 | | | 1 |
| Percentage previously employed in town | | | 36 | | | 48 |
| Sex: percentage - male | | | 18 | | | 26 |
| female | | | 82 | | | 74 |
| Percentage church membership | | | | | | |
| church members | | | 55 | | | 68 |
| non-church members | | | 45 | | | 32 |

The people who rate social occasions first, appear to be a distinct sub-cultural group within the Nyaniso community. In some cases the people tended to show strong tradionalist characteristics, for example, the low educational level and the low percentage that had been previously employed in town. The 55% church membership of this group does not coincide with a traditionalist lifestyle, creating difficulties in defining the group too rigidly.

The reason that those preferring social occasions should be found in Nyaniso only is not apparent, but could be a reflection of a greater negative attitude towards agriculture in Nyaniso as opposed to Xengxe, a finding mentioned previously.

The number of people who rated local level politics first was 7 for Xengxe and 3 for Nyaniso. Table 5.7 outlines the comparisons between the Xengxe respondents and the Xengxe community. The response by Nyaniso was considered too low to warrant analysis.

TABLE 5.7. Comparison of Socio-Economic Characteristics between Communities for those who rate Local-level Politics first

| Socio-Economic Characteristics \ Respondents | Preference for Local-level Politics | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 7 | 14 | 3 | 6 | 50 | 50 |
| Average age (years) | 60 | | - | | 56 | 58 |
| Average field size (morgen) | 1 | | - | | 1 | 2 |
| Average education (standard) | 1 | | - | | 2 | 1 |
| Percentage previously employed in town | 86 | | - | | 82 | 48 |
| Sex: percentage - male | 86 | | - | | 74 | 26 |
| female | 14 | | - | | 26 | 74 |
| Percentage church membership | | | | | | |
| church members | 29 | | - | | 48 | 68 |
| non-church members | 71 | | - | | 52 | 32 |

The average age of the respondents in Xengxe was 60 in comparison to the average of 56 years for the whole community. In fact, the entire seven people who responded were over 40 years of age and 48% were over 60 years old. The reasons given by the respondents for their preferences for local level politics revealed that they were 'elders' of the communities. Therefore, the greater age of the Xengxe respondents in relation to this question is linked to their greater response towards local-level politics.

Another difference in socio-economic characteristics between the Xengxe respondents and the Xengxe community as a whole is that of sex division. The respondents evidenced a 12% increase in the percentage of males which is linked to the preference for local-level politics because local-level politics is almost an exclusively male activity. A preference for local-level politics, therefore, seems linked to age and sex.

5.1.4 Summary

Having outlined the peoples' preferences for agriculture, the church, social occasions, and local-level politics, those who rated agriculture first deserve further comment. This group displayed no distinctive socio-economic characteristics *when compared* with the other preferences (Table 5.1). The reasons are difficult to determine, but the following suggestion is offered. Since this group comprised the largest number of people and the fact that because the people are rural and that agriculture is the common means of making a living, few distinctive socio-economic characteristics could be said to be linked to agriculture. Rather, since agricultural practices are the most common, certain socio-economic characteristics might explain why some people rated other socio-cultural elements first, in preference to agriculture. The links between the three other socio-cultural elements and socio-economic characteristics seem to be supported by Table 5.8.

TABLE 5.8. Summary of links between Socio-Cultural Factors and Socio-Economic Characteristics

| Socio-Cultural Factors | Socio-Economic Characteristics |
|---|---|
| Agriculture | - |
| Church | education, field size |
| Social Occasions | education, age, church membership, sex division, previous employment in town |
| Local-level Politics | sex division, previous employment in town, age |

In relating the characteristics of the respondents of the communities to the overall sample characteristics for this set of socio-cultural factors, it was found that no important socio-economic differences emerged for those who prefer agriculture, nor for the other preferences. The trends that do emerge tend to hold true for both communities, for example, that the sex ratios tend to be more or less equal for those who rated the church first, Table 5.5. The lack of differences suggest that the characteristics of the people who preferred agriculture, reflected the overall sample characteristics. Apart from the contrast in sex ratio, mentioned above, the same can be said about those who rated the church first. The small number of responses to social occasions and local-level politics hampered analysis which meant that the contrasts between the socio-economic characteristics of the respondents and the overall sample did not materialise.

## 5.2 PREFERENCES FOR AGRICULTURE, CATTLE OR BOTH

### 5.2.1 The Image

The respondents were also asked to rate agriculture against animal husbandry. A summary of responses as well as the relevant socio-economic characteristics dealing with those who favour agriculture,

those who favour cattle and those who favour both agriculture and cattle, is outlined in Table 5.9 below.

TABLE 5.9. Preferences and Characteristics of the second Set of Socio-Cultural Factors in both Communities

| Socio-Cultural Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage | | Percentage church membership |
| | | | | | | | M | F | |
| Preference for: | | | | | | | | | |
| 1. Agriculture | 39 | 40 | 58 | 2 | 1 | 50 | 49 | 51 | 62 |
| 2. Cattle | 24 | 25 | 58 | 2 | 3 | 36 | 50 | 50 | 71 |
| 3. Agriculture and Cattle | 34 | 35 | 58 | 2 | 1 | 67 | 56 | 44 | 41 |
| Total | 97 | 100 | | | | | | | |

Although agriculture is rated first by 40% of the respondents, in comparison to the 25% and 35% who rated cattle and both agriculture and cattle first, it was not considered to be of overwhelming importance. Cattle still seem to be considered of fair importance while the combination of agriculture and cattle points to the continued existence of a dual economy.

### 5.2.2 Links between Preferences and Socio-economic Characteristics

No relationships suggest themselves with regard to age and field size for the three preferences. This holds true for the figures at an aggregate level (Table 5.9) as well as if they are broken down into categories. The preference for cattle seems linked to education because the average standard exhibited by those who favoured cattle was Standard 3. In order to illustrate the trend more clearly, Table 5.10 gives the relevant educational categories.

TABLE 5.10. Educational Categories for the second Set of Socio-Cultural Factors in both Communities

| Socio-Cultural Factors | Socio-Economic Characteristics | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | Education Categories (standards passed) | | | | | | |
| | 0-2 | | 3-5 | | $6^{+}$ | | |
| | n | % | n | % | n | % | |
| Preference for: | | | | | | | |
| Agriculture | 31 | 79 | 8 | 21 | 0 | 0 | 39 |
| Cattle | 11 | 46 | 8 | 33 | 5 | 21 | 24 |
| Cattle and Agriculture | 29 | 85 | 3 | 9 | 2 | 6 | 34 |

In contrast to the other two categories (preference for agriculture and a preference for both), 13 of the 24 who favoured cattle (54%) passed Standard 3 and above (Table 5.10). The corresponding figure for those who rated agriculture first was 8 out of 39 (21%) and 5 out of 29 (15%) for those who favoured both cattle and agriculture. In addition, the percentage of people who rated cattle first had the lowest percentage of people in the first educational category, i.e. 46%. From the above table a trend has emerged showing higher education levels attached to the perceived importance of cattle.

Differences in percentage church membership emerged between the three preferences outlined in Table 5.9. The respondents who favoured agriculture showed a church member majority of 62%. Of those who favoured cattle, 71% were church members, while of those whose preference related to both cattle and agriculture, 41% were church members. The final difference that emerged between the preferences was the percentage of people previously employed in town. Most conspicuous is the fact that for those who preferred cattle, 36% had been previously employed in town in comparison to preferences one and three.

The links between a higher educational level and a larger percentage church membership for those who perceive cattle to be most important in comparison to groups one and three, suggest that those who perceive cattle to be important are the most acculturated group. This suggestion is backed up by the fact that 42% of the people who perceived cattle to be important, consider cattle to be a ready source of cash and other complementary notions such as; "Crops fail, cattle do not" and that,"Cattle require less attention". The low percentage of people previously employed in town for those who favoured cattle, is difficult to explain.

### 5.2.3 Contrasts between the Communities

Table 5.11 summarises the data for those who perceive agriculture, cattle, and both agriculture and cattle as important.

TABLE 5.11. Comparison of Socio-Cultural Factors and corresponding Socio-Economic Characteristics between the two Communities

| Socio-Cultural Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Preference for: | | | | | | | | | | |
| 1. Agriculture | Xengxe | 16 | 41 | 55 | 2 | 1 | 94 | 81 | 19 | 56 |
| | Nyaniso | 23 | 59 | 60 | 2 | 1 | 57 | 26 | 74 | 65 |
| | Total | 39 | 100 | | | | | | | |
| 2. Cattle | Xengxe | 9 | 38 | 51 | 1 | 3 | 56 | 67 | 33 | 44 |
| | Nyaniso | 15 | 62 | 57 | 2 | 2 | 53 | 33 | 67 | 93 |
| | Total | 24 | 100 | | | | | | | |
| 3. Cattle and Agriculture | Xengxe | 25 | 74 | 58 | 1 | 1 | 92 | 68 | 32 | 40 |
| | Nyaniso | 9 | 26 | 57 | 4 | 1 | 22 | 78 | 22 | 44 |
| | Total | 34 | 100 | | | | | | | |

In dealing with the preference for agriculture first, 59% of the people from Nyaniso rated this aspect first. A greater percentage of respondents from Nyaniso (62%) than from Xengxe (38%), also perceived cattle to be important, while when both agriculture and cattle were considered, 74% of the residents of Xengxe rated this first in comparison to the 28% of respondents from Nyaniso.

An explanation for the unexpected bias towards agriculture by the respondents from Nyaniso could involve their sex ratio. Given the alternatives, agriculture or cattle, and the majority of the respondents in Nyaniso being women, their choice of agriculture could stem from the fact that women under traditional custom were prohibited from herding cattle and that they still displayed a reluctance in that direction. This statement is backed up by the finding that the percentage of men in the Nyaniso group who preferred cattle is 7% greater than the percentage of men in the group who preferred agriculture. The group who preferred cattle still retained a female majority simply because the majority of the entire sample drawn from Nyaniso was comprised of women.

There was a reluctance in the minds of the Xengxe residents to state a clear preference for cattle or agriculture. A large degree of interdependence also presented itself because oxen were needed to plough the land and were used to do so by 88% of the residents of Xengxe. In Nyaniso the use of oxen for ploughing was only mentioned by one respondent.

Socio-economic differences between the communities relating to

the preference of agriculture are outlined by Table 5.12. A difference which does not appear at an aggregate level, but which does suggest some relationship to the 46% of people in Nyaniso who rated agriculture above cattle or both agriculture and cattle, is that of field size. When the field sizes were divided into categories, 32% of those responding from Nyaniso had fields of over four morgen in extent, while the equivalent number for Xengxe was 2%.

TABLE 5.12. Comparison of Socio-Economic Characteristics between Communities for those who rate Agriculture first

| Socio-Economic Characteristics \ Respondents | Preference for Agriculture | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 16 | 32 | 23 | 46 | 50 | 50 |
| Average age (years) | 55 | | 60 | | 56 | 58 |
| Average field size (morgen) | 2 | | 2 | | 1 | 2 |
| Average education (standard) | 1 | | 1 | | 2 | 1 |
| Percentage previously employed in town | 94 | | 57 | | 82 | 48 |
| Sex: percentage - male | 81 | | 26 | | 74 | 26 |
| female | 19 | | 74 | | 26 | 74 |
| Percentage church membership church members | 56 | | 65 | | 48 | 66 |
| non-church members | 44 | | 35 | | 52 | 32 |

Other differences that reveal themselves are percentage sex division and church membership. The male/female ratio was biased heavily in favour of the males in Xengxe while the ratio for the Nyaniso respondents was 26:74, the same as for the Nyaniso community as a whole. The percentage church membership between the communities varied, the respondents of Xengxe exhibiting a 56% church membership, while the membership of the people who favoured agriculture in Nyaniso was 65%. In addition, those who favoured

agriculture in Xengxe, showed a greater proportion of church members than did the Xengxe community as a whole. The opposite was true of a comparison between those who favoured agriculture in Nyaniso and the overal community characteristics of Nyaniso.

An explanation for the larger field sizes exhibited by the Nyaniso respondents who preferred agriculture (page 123) does not readily present itself. The fact that the percentage of males favouring agriculture in Xengxe exceeded the percentage displayed by the Xengxe community as a whole, does not seem to fit in with the classification of Xengxe as more traditional than Nyaniso, since traditionally men were not concerned with agriculture. Stock reduction programmes (an aspect bitterly complained about in Xengxe) could explain the predominant male respons to agriculture since the possibility of accumulating cattle was non-existent. The differences in percentage church membership do not reflect a definite trend and are, therefore, not considered important.

A stated preference for cattle as opposed to agriculture was not rated highly in the minds of the people from both communities. The percentage response from Xengxe was 18, while that of Nyaniso was 30. The resultant table which forms the basis of the analysis of this section is Table 5.13.

The two contrasts between the communities deal with the percentage of people previously employed in town and church membership. The Xengxe respondents show a 26% reduction in comparison to the Xengxe sample with regard to previous employment in town, while the Nyaniso respondents show an increase in comparison to the

Nyaniso sample. With regard to church membership, the Xengxe respondents showed a decline in comparison with their sample characteristics, while the equivalent figure for Nyaniso was an increase of 25%. The greater preference for cattle by the respondents of Nyaniso in comparison to those of Xengxe (80% as opposed to 18%), seems therefore to be linked to an increase in church membership. This finding which is opposite to the equivalent condition displayed by those from Xengxe, is not easily explained.

TABLE 5.13. Comparison of Socio-Economic Characteristics between Communities for those who rate Cattle first

| Socio-Economic Characteristics \ Respondents | Preference for Cattle | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 9 | 18 | 15 | 30 | 50 | 50 |
| Average age (years) | 51 | | 57 | | 56 | 58 |
| Average field size (morgen) | 1 | | 2 | | 1 | 2 |
| Average education (standard) | 3 | | 2 | | 2 | 1 |
| Percentage previously employed in town | 56 | | 53 | | 82 | 48 |
| Sex: percentage - male | 67 | | 33 | | 74 | 26 |
| female | 33 | | 67 | | 26 | 74 |
| Percentage church membership | | | | | | |
| church members | 44 | | 93 | | 48 | 68 |
| non-church members | 56 | | 7 | | 52 | 32 |

Both communities perceived a degree of interdependence between cattle and agriculture. More respondents rated both cattle and agriculture first in Xengxe than in Nyaniso. Details are given in Table 5.14.

TABLE 5.14. Comparison of Socio-Economic Characteristics between Communities for those who rate both Cattle and Agriculture first

| Socio-Economic Characteristics / Respondents | Preference for both Cattle and Agriculture | | | | Overall Sample Characteristics | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | Xengxe | Nyaniso |
| | n | % | n | % | | |
| | 25 | 50 | 9 | 18 | 50 | 50 |
| Average age (years) | 58 | | 57 | | 56 | 58 |
| Average field size (morgen) | 1 | | 4 | | 1 | 2 |
| Average education (standard) | 1 | | 1 | | 2 | 1 |
| Percentage previously employed in town | 92 | | 22 | | 82 | 48 |
| Sex: percentage - male | 68 | | 22 | | 74 | 26 |
| female | 32 | | 78 | | 26 | 74 |
| Percentage church membership | | | | | | |
| church members | 40 | | 44 | | 48 | 68 |
| non-church members | 60 | | 56 | | 52 | 32 |

While differences in socio-economic characteristics did emerge in the areas of average field size, percentage previous employment in town, percentage sex division, and percentage church membership, these differences must be treated with caution and cannot be said to be linked to a preference for cattle and agriculture. The difference in average field size between the two communities is distorted since the average field size of four morgen for Nyaniso is unrepresentative and is inflated by one of the nine respondents having a field size of 12 morgen. The percentage of people previously employed in town reflected by the Xengxe respondents is 92% which is higher than that of the Xengxe sample as a whole and represents a sharp contrast to the 22% of Nyaniso. A decrease in church membership is also apparent from Table 5.14, with the respondents of Nyaniso showing a 24% decrease in comparison to the community as a whole. The relationship between a high percentage of people employed in town and a 50%

preference for cattle and agriculture in Xengxe is difficult to understand. In addition, few inferences can be drawn for the decrease in church membership, on the part of the Nyaniso respondents, in this context.

5.2.4 Summary

In the above analysis, dealing with preferences for agriculture or cattle or agriculture and cattle combined, mention has been made of traditional attitudes. Describing attitudes as traditional, does not mean that they reflect purely indigenous ideas held prior to the arrival of the Whites in South Africa. At the same time, the people in the communities have not adopted western traits completely. Mention of traditional attitudes means, therefore, holding to attitudes that resemble indigenous ones more closely than they do commercial ones.

Difficulties arise in trying to classify one community as more traditional than the other for *this set of socio-cultural factors*, despite pointers to this effect in Chapter 3. In Chapter 3, Xengxe seemed the more traditional community. An example of the difficulty in classification is that the people in Xengxe who favoured agriculture were mainly men. Traditionally, men had little to do with agriculture. On the other hand, the high proportion of people in Xengxe favouring both cattle and agriculture suggests a very strong traditional outlook. The reason is that the traditional economy of the people comprised both cattle and agriculture as interdependent factors. Further investigation is needed to establish which attitudes are modified remnants

of the traditional system and which are the result of other factors.

## 5.3 PREFERENCES FOR AGRICULTURE AS OPPOSED TO EMPLOYMENT IN TOWN

The major alternative to agriculture in terms of a means of livelihood, is that of employment in town. An attempt was made to elicit preferences for either one or the other in order to gauge the attitude of the people to the rural communities and if the people experienced a 'pull' towards the urban areas.

### 5.3.1 The Image

Table 5.15 shows that 84% of the people in both communities together prefer agriculture to employment in town. It could be argued that this finding is of no value since the people interviewed were rural and had presumably chosen rural life with its corollary, agriculture, rather than employment in town. The finding remains important, however, because Table 5.15 shows that 52% of those preferring agriculture had been previously employed in town.

TABLE 5.15. Preferences and Characteristics of the third Set of Socio-Cultural Factors in both Communities

| Socio-Cultural Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Preference for: | | | | | | | | | |
| 1. Agriculture | 80 | 84 | 57 | 2 | 1 | 57 | 50 | 50 | 54 |
| 2. Employment in town | 15 | 16 | 57 | 2 | 2 | 71 | 50 | 50 | 73 |
| Total | 95 | 100 | | | | | | | |

5.3.2 Links between Preferences and Socio-economic Characteristics

In dealing with education, those who favoured employment in town were seen to have an average education of Standard 2, a higher average than those who preferred agriculture. Although in both cases the majority of people fell into the lowest category (below Standard 2), 47% of those who perceived employment in town as more important, had an education above Standard 3 in comparison to 24% for those who preferred agriculture. Both categories exhibited an average age of 57 years, but on breaking the ages into categories, the data revealed that 33% of those favouring employment in town fell within the 20-39 age bracket, while the equivalent figure for those who favoured agriculture was 16%. Field size does not appear to have any relationships with the socio-cultural factors in this case. A relationship between church membership and employment in town reveals itself in that 73% (11 respondents) of those who favoured employment in town were church members. The equivalent percentage for those who perceived agriculture as most important was 54%. An expected relationship is seen between previous town employment, while sex division in this case seems not to affect perception of agriculture or employment in town.

A summary of the above findings shows that the people who favour employment in town as opposed to those who favoured agriculture, had on average, the higher educational standard, the lower ages, and the greater percentage of church membership. These findings have implications for the two communities since the group with the most potential in terms of education and age, favour not agriculture, but the towns.

### 5.3.3 Contrasts between the Communities

The people in both communities stated an overwhelming preference for agriculture as opposed to employment in town. The percentage response for Xengxe was 90, while that of Nyaniso was 70. An analysis of the differences showed that the socio-economic characteristics of the respondents do not differ greatly from the overall community characteristics or between the two groups of respondents themselves. The alternative to agriculture was employment in town. Differences in socio-economic characteristics do emerge, but the number of respondents is small (4 for Xengxe and 11 for Nyaniso) making inferences on the basis of socio-economic conditions non-viable. Nevertheless, the low response to employment in town is itself significant in that the rural communities themselves are seen in a more favourable light than the towns. Despite the fact that most of the people favouring towns would have presumably been in the towns at the time of the survey, the finding remains important. The reason is that 65% of the sample had been previously employed in town - 82% in Xengxe and 48% in Nyaniso. The reason for the low percentage of previous town employment in Nyaniso was precisely because of the large number of people in the towns at the time of the survey.

## 5.4 DISCUSSION OF FINDINGS

Having outlined the socio-cultural factors favoured by different groups of people, the differences in socio-economic characteristics between the groups, and the groups as distinct entities, a short discussion on each will complete the chapter.

An evaluation of the image of agriculture in relation to the other socio-cultural elements reveals that it is not considered a dominant aspect. Table 5.1 shows that with regard to the first set of socio-cultural factors, 52% rated agriculture first. When the second set of factors is considered, those who rated agriculture first, totalled 39%, while for the third set, 84% favoured agriculture. The figure (39%) for the second set of factors does not reflect a true preference for agriculture because 50% of those also perceived both cattle and agriculture to be important, stated that cattle were needed for ploughing. Thus, agriculture is perceived to be more important for the second set of factors than the figure of 39% suggests. The preference for agriculture by 84% of the people with regard to the third set of socio-cultural factors is considered inflated. The reason for the inflated figure is that most people wishing to live in town were presumably there. This meant that the findings, having been derived from the rural areas, would be biased in favour of agricultural preferences. Overall, taking into account the above qualifying statements, the peoples' image of agriculture (i.e. the cultivation of the fields) seems neither negative nor positive. The image seems to suggest that it is partially embedded within the other socio-cultural elements. Agriculture is embedded when it is restricted by other factors. For example, the peoples' perceived importance of social occasions could hamper agricultural productivity. The idea of the embeddedness of agriculture is considered an important drawback because agriculture represents the major means of livelihood of the people in the two communities.

Details of the links that emerged between the socio-economic characteristics and the preferences have been dealt with at length in each section of the chapter. The more important links which are summarised in Table 5.16 below, draw attention to those findings and their relation to the hypothesis that:

> there is a link between the socio-economic characteristics of groups of people and their images of, or preference for, the factors of the agricultural framework.

TABLE 5.16. Links between Socio-Cultural Factors and Socio-Economic Characteristics

| Socio-Cultural Factors | Socio-Economic Characteristics |
|---|---|
| A. First set | |
| Preference for: | |
| Agriculture | Previous employment in town |
| Church | Educational standard, previous employment in town |
| Social occasions | Age, educational standard, previous employment in town, sex ratio |
| B. Second set | |
| Preference for: | |
| Cattle | Educational standard, church membership, previous employment in town |
| C. Third set | |
| Preference for: | |
| Employment in town | Educational standard, age, church membership |

On the basis of the above links a relationship exists between the socio-economic characteristics and the socio-cultural factors, but as in Chapter 4, the strengths of the relationships between the two are difficult to determine. The relationships that do emerge point to possible avenues of research of which the influence of the church, previous employment in town, education, and age are the most important in that order. Differences between perceptions of socio-cultural factors may vary by location.

Differences in percentage response emerged between the communities for the entire first set of socio-cultural factors, except for those who rated the church first - Table 5.3. While differences also emerged with regard to the second set of factors, the greatest difference was recorded between the community responses in relation to those who regarded agriculture and cattle equally important - Table 5.11. Differences that emerged in relation to agriculture and employment in town were not pronounced in that a 10% difference was recorded in favour of Xengxe with regard to preference for agriculture as opposed to employment in town.

On the basis of the above paragraph, it seems that there were considerable differences in preference and attitude between communities. The main contribution of this section was that Xengxe was shown to have a greater agricultural bias than Nyaniso. The contribution of findings related to the links in socio-economic characteristics and preferences when the communities were contrasted proved less fruitful. For example, the findings that emerged from a consideration of the first set of socio-cultural factors seemed to reveal little, while those related to the second and third sets centred around the relative traditional attitudes of the communities. Both communities displayed traditional attitudes, but with regard to different preferences, so that a definite trend, revealing one community to be more traditional than the other, was not evident.

The fact that agriculture is embedded within the socio-cultural factors and that Xengxe has a more positive attitude to agriculture, are important findings. A comprehensive view, however, requires a consideration of specific aspects linked to the production of crops

(economic factors) and instruction (knowledge and organizational factors). Chapter 6 deals with these aspects.

# CHAPTER 6

## ECONOMIC, KNOWLEDGE AND ORGANIZATIONAL FACTORS

In this chapter, the economic, knowledge and organizational factors are combined. The major reason for the combination of factors is that the responses to the questions were not as satisfactory as those in Chapters 4 and 5. Responses to questions on farmers' associations, tenure and the means of achieving a crop surplus were of little importance because it seems that these aspects were not clear to the people. At the time of the survey the farmers' associations had become inoperative, while with regard to tenure, the people did not differentiate between the tenurial system as such and the consolidation measures undertaken by the government. In addition, small responses, especially from the Nyaniso residents, made the evaluation of findings difficult.

The analytical procedure remains the same in this chapter as in Chapters 4 and 5. Analysis takes place in three steps at two different levels. The first level concerns both communities treated as a unit, while at the second level the communities are contrasted. At each level an attempt is made to identify the image, link the different images to the different socio-economic characteristics of the people, and finally, to evaulate the findings. The basic elements included, under economic, knowledge and organizational factors were outlined in Chapter 3 and will be listed briefly in the introduction to each section.

### I. ECONOMIC FACTORS

Economically speaking, the communities can be termed semi-subsistence since they do not rely absolutely on crops produced, but also on remittances from the urban areas. The semi-subsistence nature of their economy means that there is little commercial activity.

The investigation will, therefore, be centered around the adequacy of crops grown, the means of increasing production and technology. These aspects are all closely related to the basic production of food.

## 6.1 DIVISION OF LABOUR PREFERENCES

The first economic element under consideration is the division of labour between the men, women and children. The aim of this section was to find out who the people thought should be responsible for the three stages of production. Responses were called for, for three main stages of production, namely, ploughing, tending, and reaping. All the possibilities of the labour combinations were considered - Table 6.1.

TABLE 6.1. Perception of Division of Labour

| Economic Factors | Respondents | |
|---|---|---|
| | n | % |
| Labour Categories: | | |
| 1. Ploughing | | |
| men | 9 | 9 |
| women | 7 | 7 |
| men, women and children | 46 | 47 |
| men and women | 11 | 11 |
| women and children | 17 | 18 |
| men and children | 7 | 7 |
| | 97 | 99 |
| 2. Tending | | |
| men | 2 | 2 |
| women | 11 | 11 |
| men, women and children | 44 | 46 |
| men and women | 12 | 13 |
| women and children | 25 | 26 |
| men and children | 2 | 2 |
| | 96 | 100 |
| 3. Reaping | | |
| men | 1 | 1 |
| women | 12 | 12 |
| men, women and children | 47 | 48 |
| men and women | 12 | 12 |
| women and children | 24 | 24 |
| men and children | 2 | 2 |
| | 98 | 99 |

6.1.1 The Image

The most important labour grouping in the minds of the people was that comprising men, women and children. 47% of the people considered this labour grouping important for ploughing, 46% for tending and 48% for reaping. Two aspects deserve mention: the fact that the fluctuation between categories is minimal, and that the group represents a combination of people, not a division of labour. The responses to the other labour groupings also show small differences between the ploughing, tending and reaping categories. Mention will only be made of the three groupings which demonstrate fluctuations in the number of responses, viz., men; women and children; men and children. The response to the questions that only men should plough, tend and reap diminishes accordinly, with 9 people considering that men should plough, 2 that men should tend, and one that men should reap. Much the same pattern can be seen with regard to the response to the questions concerning men and children as a labour group - Table 6.1. The opposite trend is observable with regard to the women and children labour group. Whereas 17 people considered that women and children should plough, this figure rose to 25 and 24 for the labour categories of tending and reaping respectively. The above findings suggest that the traditional division of labour by sex and by category has begun to disappear. Men, women and children are considered important in all three stages of the crop production cycle and other differences remain small.

### 6.1.2 Links between labour categories and Socio-economic Characteristics

In attempting to recognise relationships between the perceptions and the socio-economic conditions, only the three groups perceived to be the most important will be considered, namely, men, women and childeren; men and women; and women and children. Table 6.2 outlines the findings.

The comparison between perceptions will mainly be undertaken for the ploughing category, because of the great degree of overlap in the responses in all three categories. In addition, the differences observed in the socio-economic characteristics of the labour groups under ploughing tend to be much the same for the tending and reaping categories.

TABLE 6.2. Preferences and corresponding Socio-Economic Characteristics of Labour Groups in both Communities

| Economic Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage | | Percentage church membership |
| | | | | | | | M | F | |
| Labour Categories: | | | | | | | | | |
| 1. Ploughing | | | | | | | | | |
| a. men, women and children | 46 | 52 | 56 | 1 | 1 | 74 | 59 | 41 | 54 |
| b. men and women | 11 | 15 | 61 | 2 | 1 | 91 | 91 | 9 | 27 |
| c. women and children | 17 | 23 | 57 | 3 | 1 | 47 | 18 | 82 | 53 |
| Total | 74 | 100 | | | | | | | |
| 2. Tending | | | | | | | | | |
| a. men, women and children | 44 | 54 | 55 | 1 | 1 | 79 | 61 | 39 | 57 |
| b. men and women | 12 | 15 | 63 | 2 | 1 | 92 | 92 | 8 | 33 |
| c. women and children | 25 | 31 | 59 | 2 | 1 | 36 | 16 | 84 | 52 |
| Total | 81 | 100 | | | | | | | |
| 3. Reaping | | | | | | | | | |
| a. men, women and children | 47 | 57 | 56 | 1 | 1 | 74 | 57 | 43 | 55 |
| b. men and women | 12 | 14 | 61 | 2 | 1 | 92 | 92 | 8 | 50 |
| c. women and children | 24 | 29 | 53 | 2 | 1 | 46 | 25 | 75 | 58 |
| Total | 83 | 100 | | | | | | | |

(i) Age seems not to be strongly related to any of the perceived labour groupings. Mention could be made, however, of the fact that the average age for those who consider that men and women should do the ploughing is 61. The comparative figures for those who perceive that men, women and children should plough, are 56 and 57 years.

(ii) Those that perceived that men and women (group 1.b) should do the ploughing, have a 27% church membership in contrast to group 1.a and 1.c, whose figures are 54% and 53% respectively.

(iii) 91% of those who perceived that men and women (group 1.b) should do the ploughing had been previously employed in town as opposed to the 74% and 47% of groups 1.a and 1.c.

(iv) A difference in the sex composition was observed between those who preferred men and women (group 1.b) to do the ploughing and groups 1.a and 1.c. The male/female ratios were 91:9; 59:41 and 18:82 respectively. Further research is necessary to account for these differences, but they could be a manifestation of different perceptions between the two communities, which will be investigated in the next section.

### 6.1.3 Contrasts between the Communities in relation to the Division of Labour

The method of analysing the differences between the communities in relation to attitudes towards the economic factors, is the same as that employed in relation to the physical and socio-cultural

factors. In analysing attitudes towards the division of labour, the three most important perceived labour combinations - men, women and children; men and women; and women and children - were contrasted by community with regard to only one production stage, that of ploughing. The tending and reaping stages were not considered because the number of responses was more or less constant for the three production stages, Table 6.1. The perceived labour combination responses to ploughing plus the corresponding socio-economic characteristics are listed in Table 6.3.

TABLE 6.3. Comparison of Labour Groups and corresponding Socio-Economic Characteristics between the two Communities

| Economic Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Perceived Labour Combinations: | | | | | | | | | | |
| 1. Men, women and children | Xengxe | 33 | 72 | 56 | 1 | 1 | 79 | 73 | 27 | 47 |
| | Nyaniso | 13 | 28 | 56 | 2 | 1 | 46 | 23 | 77 | 77 |
| Total | | 46 | 100 | | | | | | | |
| 2. Men and women | Xengxe | 9 | 82 | 59 | 2 | 1 | 100 | 100 | - | 33 |
| | Nyaniso | 2 | 18 | - | - | - | - | - | - | - |
| Total | | 11 | 100 | | | | | | | |
| 3. Women and children | Xengxe | 1 | 6 | - | - | - | - | - | - | - |
| | Nyaniso | 16 | 94 | 57 | 3 | 1 | 44 | 19 | 81 | 50 |
| Total | | 17 | 100 | | | | | | | |

The following are the main features derived from the above table:

(i) Of those who consider men, women and children to be important, 72% reside in Xengxe and 39% in Nyaniso.

(ii) The men and women combination is considered important by 11 people, 9 belonging to Xengxe and 2 being Nyaniso residents.

(iii) Women and children were considered the most important labour category by the Nyaniso residents if the 16 respondents to this category are compared to the others which total 13 for the first category and 2 for the second.

Since the difference between labour combinations 1 and 3 (Table 6.3) is the presence or absence of men, it was significant that the labour combination which includes men was perceived to be the most important by the Xengxe respondents with their 73:27 male/female ratio. In addition, the combination without men (that of women and children) had the greatest response from Nyaniso which exhibited a male/female relationship of 19:81. The absence of men in the Nyaniso sample as a whole, as shown by the male/female relationship of 26:74, could be linked to the majority of respondents in Nyaniso perceiving women and children to be the most imprtant labour combination, since the women and children have to till the fields. Attempts to establish links between the image of each set of respondents and their socio-economic characteristics were not fruitful. The values of the socio-economic characteristics of the Xengxe and Nyaniso respondents reflected the overall sample characteristics, while responses by Nyaniso in the other two categories were too small to warrant analysis (Table 6.3).

6.1.4 Summary

The main findings of this section concern, firstly, the labour combination of men, women and children, which was preferred by an average of 58% of the respondents if categories 1, 2 and 3 (Table 6.2) are combined. Secondly, while differences between

the images were matched by differences in socio-economic characteristics, the way in which they were linked was not apparent. Thirdly, the major preferences of each community seem to be linked to their respective sex composition. For example, 33 people in Xengxe (72% of tne responses) considered men, women and children to be the most important labour combination, while the most important combination for Nyaniso was the one comprising women and children. At the same time, the percentage male/female ratio for Xengxe was 74:26, while the figure for Nyaniso was 26:74. The preferred labour combination, therefore, seems to reflect the population characteristics of the communities.

## 6.2 THE ADEQUACY OF CROP PRODUCTION

The overriding theme in subsistence and semi-subsistence agriculture is that of the home consumption of the crops grown. To ascertain whether the crops are grown in sufficient quantity to feed the people is important not only in terms of the welfare of the people themselves but also to enable one to gauge the potential of a surplus being produced.

### 6.2.1 The Image

The investigation showed that of the 82 people who responded, 40 considered their crops inadequate to feed their families. The perceived reasons for the inadequacy of the crops was outlined in Table 6.4.

TABLE 6.4. Perceived Reasons for the Inadequacy of Crops

| Economic Factors | Respondents | |
|---|---|---|
| | n | % |
| Perceived reasons for inadequacy of crops: | | |
| 1. Insufficient field size | 7 | 17 |
| 2. Infirmity | 6 | 15 |
| 3. Incorrect ploughing and tilling | 5 | 13 |
| 4. "Don't know" | 15 | 38 |
| 5. Miscellaneous | 7 | 17 |
| Total | 40 | 100 |

Three aspects concerning the above table deserve mention:

(i) A variety of 'positive' reasons was given and no one reason appeared to be dominant.

(ii) Field size emerges again as a physical constraint.

(iii) 38% of the people could not account for the inadequacy of their crops.

The impression gained from the above table is that the people are not sure in their own minds why their crops were inadequate. This is suggested by the range of 'positive' reasons being so low in numerical terms as well as by the relatively large negative response.

### 6.2.2 Links between the perceived adequacy of Crop Production and Socio-economic Characteristics

An attempt to isolate different trends in the characteristics for those who perceive their crops to be adequate and those who

do not, seems only to involve the difference in the male/female ratio. Those who consider the crops inadequate have a male/female ratio of 38:62, while the corresponding figures are 71:29 for those who consider the crops adequate. Although reasons for attitudes being split along male/female lines are not clear, the different attitudes held by the sexes is a recurrent theme in the analysis as a whole and could form the focus for a further investigation.

In attempting to link the reasons for the inadequacy of the crops to socio-economic characteristics, the five sets of reasons, given by the people, will be regrouped into positive and negative responses. Groups 1, 2, 3 and 5 of Table 6.4 will comprise the positive responses and group 4 the negative. Table 6.5 outlines the differences.

TABLE 6.5. Responses and corresponding Socio-Economic Characteristics to Crop Inadequacy in both Communities

| Economic Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage | | Percentage church membership |
| | | | | | | | M | F | |
| Reasons for crop inadequacy: | | | | | | | | | |
| 1. Positive reasons | 25 | 63 | 59 | 2 | 2 | 72 | 40 | 60 | 64 |
| 2. Negative reasons | 15 | 37 | 55 | 3 | 1 | 47 | 33 | 67 | 47 |
| Total | 40 | 100 | | | | | | | |

The major differences are as follows:

(i) 64% of those who responded positively were church members, while the equivalent figure for those who responded negatively was 47%.

(ii) 72% of those who responded positively had been previously employed in town, but 47% was recorded for those whose responses were negative.

### 6.2.3 Contrasts between the Communities in relation to the adequacy of Crop Production

TABLE 6.6. Perceived Adequacy of Crops and corresponding Socio-Economic Characteristics between Communities

| Economic Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage | | Percentage church membership |
| | | | | | | | | M | F | |
| Perceived adequacy of crops: | | | | | | | | | | |
| 1. Adequate | Xengxe | 40 | 95 | 57 | 1 | 1 | 78 | 73 | 27 | 50 |
| | Nyaniso | 2 | 5 | - | - | - | - | - | - | - |
| Total | | 42 | 100 | | | | | | | |
| 2. Inadequate | Xengxe | 9 | 23 | 51 | 1 | 2 | 100 | 78 | 22 | 56 |
| | Nyaniso | 31 | 78 | 59 | 2 | 3 | 52 | 26 | 74 | 39 |
| Total | | 40 | 101 | | | | | | | |

Table 6.6 reveals large differences in the responses between the communities for both sets of perceptions. These are:

(i) 40 people from Xengxe perceived their crops to be adequate, while the figure for the Nyaniso respondents was 2.

(ii) 9 of the Xengxe respondents perceived their crops to be inadequate. The figure for the people in Nyaniso was 31.

Large differences also appear in the percentage response to the reasons for the inadequacy of the crops between the two communities of Xengxe and Nyaniso. The number of positive responses from Xengxe was 4 (8%) while that of Nyaniso was 14 (28%). Similarly, the number of negative responses from Xengxe was 3

(5%) and the figure was 12 (24%) from Nyaniso. For both the perception of the adequacy of the crops and the perceived reasons for the adequacy/inadequacy, differences in socio-economic characteristics between the communities were not able to be shown because of the small number of responses.

### 6.2.4 Summary

Despite the fact that links between socio-economic conditions and the perception of the crops as adequate/inadequate could not be shown in some cases and were of little importance in others, the perceptions themselves are important - 49% of the respondents (40 individuals) considered their crops to be inadequate, and of those 40, 37% (15 individuals) could give no reason for the inadequacy. The negative responses, especially in relation to the 15 individuals cited above, suggests that a fair proportion of the people lack knowledge in relation to a basic aspect of their livelihood - why there is not enough food to feed the homestead. It also reflects a negative attitude to agriculture which in turn has implications for the extension service.

## 6.3 MEANS OF INCREASING PRODUCTION

In analysing the responses as to how more food could be produced, the responses will be classified into two aspects - human factors and physical factors. The human factors involve effort and activity by the people themselves, whereas the physical factors are related to external influences such as rainfall. The classification of responses into human and physical should give some indication as to whether the people felt that they could increase

production by improving techniques or whether the means of increasing production revolved around physical factors.

### 6.3.1 The Image

Dealing firstly with the positive responses, Table 6.7 shows that human factors seem to be perceived by the majority of the farmers to be the most effective means of increasing production - 53 people.

TABLE 6.7. Perceived Means of increasing Production

| Economic Factors | Communities | | | | Total | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | | |
| | n | % | n | % | n | % |
| Means of increasing Production: | | | | | | |
| 1. Positive Responses | | | | | | |
| a. Human factors | | | | | | |
| (i) fertilization | 2 | | 2 | | 4 | |
| (ii) correct ploughing | 8 | | 0 | | 8 | |
| (iii) good tilling | 12 | | 5 | | 17 | |
| (iv) good tilling and fertilization | 9 | | 2 | | 11 | |
| (v) correct ploughing and fertilization | 4 | | 0 | | 4 | |
| (iv) miscellaneous | 6 | | 3 | | 9 | |
| | 41 | 77 | 12 | 23 | 53 | 100 |
| b. Physical factors | | | | | | |
| (i) rainfall | 3 | | 0 | | 3 | |
| (ii) machinery | 1 | | 3 | | 4 | |
| (iii) miscellaneous | 3 | | 1 | | 4 | |
| | 7 | | 4 | | 11 | |
| 2. Negative responses | 1 | 3 | 33 | 97 | 34 | 100 |
| Total | 49 | | 49 | | 98 | |

The total number of people perceiving an increase in production to be linked to physical factors was 11, while 34 people (35% of the total number or respondents) responded negatively. The above findings suggest that 54% of the people do not feel constrained by environmental factors. The fact that 34% reacted

negatively to this question is significant especially if efforts are to be made to increase production.

### 6.3.2 Links between the Perceived Means of increasing Production and Socio-economic Characteristics

Table 6.8 attempts to link attitudes to the socio-economic characteristics of the respondents. The various responses which were included under the heading 'positive responses' in Table 6.7 are combined in this table because of the low number of responses recorded by some of the categories, viz., fertilization, correct ploughing methods, rainfall and machinery (Table 6.7).

TABLE 6.8. Responses to Means of increasing Production and the corresponding Socio-Economic Characteristics in both Communities

| Economic Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage | | Percentage church membership |
| | | | | | | | M | F | |
| Means of increasing production: | | | | | | | | | |
| 1. Positive responses | 64 | 65 | 57 | 2 | 1 | 79 | 68 | 32 | 44 |
| 2. Negative responses | 34 | 35 | 57 | 2 | 1 | 44 | 21 | 79 | 62 |
| Total | 98 | 100 | | | | | | | |

The following contrasts deserve mention:

(i) Those who responded positively had a lower percentage of church membership (42%) as opposed to those who responded negatively (62%).

(ii) 79% of the positive respondents had been previously employed in town in comparison to the 44% recorded by the negative respondents.

(iii) The male/female ratio of the positive respondents was 68:32, while the equivalent figure for those who responded negatively was 21:79. The most important contrast is considered to be one of sex composition. This finding, in which the positive attitude towards agriculture is reflected by a majority of males, reinforces a trend which appeared in Chapters 4 and 5.

### 6.3.3 Constrasts between the Communities in relation to the Perceived Means of increasing Production

The differences between the two communities with regard to their responses and socio-economic characteristics related to the means of increasing crop production, are outlined in Table 6.9.

TABLE 6.9. Responses to Means of increasing Production and the corresponding Socio-Economic Characteristics between Communities

| Economic Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Means of increasing production: | | | | | | | | | | |
| 1. Positive responses | Xengxe | 48 | 75 | 55 | 1 | 2 | 83 | 73 | 27 | 48 |
| | Nyaniso | 16 | 25 | 59 | 3 | 2 | 63 | 31 | 69 | 75 |
| Total | | 64 | 100 | | | | | | | |
| 2. Negative responses | Xengxe | 1 | 3 | - | - | - | - | - | - | - |
| | Nyaniso | 33 | 97 | 56 | 1 | 1 | 42 | 18 | 82 | 64 |
| Total | | 34 | 100 | | | | | | | |

Large differences in the number of responses per community for both positive and negative attitudes are to be seen. The positive responses are dominated by the people from Xengxe (75%), whereas the opposite is the case for those who responded negatively - 97% were from Nyaniso. The differences in socio-economic characteristics between the communities for the positive

responses are listed below. Analysis of the negative responses is hampered by only one response from Xengxe.

(i) The Xengxe respondents have an average field size of 1 morgen, while the average field size for the Nyaniso respondents was 3 morgen.

(ii) 48% of the Xengxe respondents were church members, whereas the figure for the Nyaniso respondents was 75%.

(iii) The male/female ratio for Xengxe was 73:27 and 31:69 for Nyaniso.

(iv) 83% of the Xengxe respondents were previously employed in town while the equivalent figure for Nyaniso was 63%.

The most important finding is that 73% of the Xengxe respondents were male, while the equivalent percentage for the Nyaniso respondents was 31. Once again, the perception of the people seems to be influenced by their sex. In the case of the females, the tendency with relation to increasing production, is to respond negatively.

6.3.4 Summary

The above findings suggest that there is some human potential to be tapped in relation to the means of increasing production, since 33% of the people considered the answer to lie in improved farming practices. At the same time, the large negative response (38%) must not be lost sight of. The negative attitude to increasing production seems to be confined almost exclusively to Nyaniso and seems to be linked to the high percentage of women in that community.

## 6.4 TECHNOLOGY

In analysing the peoples' attitude towards improving production, the aspect of technology was incorporated. The people were asked what tools or machinery would help them produce more.

### 6.4.1 The Image

TABLE 6.10. Perceived Technology for increased Production

| Economic Factors | Communities | | | | Total | |
|---|---|---|---|---|---|---|
| | Xengxe | | Nyaniso | | n | % |
| | n | % | n | % | | |
| Technology for increased production: | | | | | | |
| 1. Tractors | 40 | 98 | 5 | 50 | 45 | 88 |
| 2. Planters, harrows and ploughs | 1 | 2 | 5 | 50 | 6 | 12 |
| | 41 | 100 | 10 | 100 | 51 | 100 |

Table 6.10 indicates that tractors are seen as holding a great amount of potential in the minds of the people (45 of the 51 responses). Other mechanical aids such as ploughs, harrows and planters (all animal-drawn), were not perceived to be very important.

### 6.4.2 Links between the Perception of Technology and Socio-economic Characteristics

The following results, outlined by Table 6.11 may be observed. The number of people perceiving other machinery to be important totalled six. For this reason the differences displayed are not important. Two differences, however, are worth mentioning - the percentage previous employment in town and the male/female

ratio. These two elements (employment in town and sex division) seemed linked. Thus a high proportion of men (71%) linked to a high percentage of town employment perceive tractors as technology necessary for increasing production. On the other hand, the majority of females who have not been employed in town tend to favour more traditional implements. The effect of the experience in town mostly by men with particular reference to agricultural productivity and technology could be a fruitful avenue of further research.

TABLE 6.11. Perceived Technology for increasing Production and the corresponding Socio-Economic Characteristics in both Communities

| Economic Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage | | Percentage church membership |
| | | | | | | | M | F | |
| Technology for increased production | | | | | | | | | |
| 1. Tractors | 45 | 88 | 56 | 2 | 1 | 82 | 71 | 29 | 49 |
| 2. Other machinery | 6 | 12 | 54 | 3 | 1 | 33 | 17 | 83 | 67 |
| | 51 | 100 | | | | | | | |

## 6.4.3 Contrasts between the Communities in relation to the Perception of Technology

A consideration of the perceived technology required to increase production in relation to responses from each community displayed large differences. Of the two categories, tractors and other machinery, 40 of the 45 people who perceived tractors to be important, were from Xengxe. Of the six respondents who perceived other machinery as the most important, one was from Xengxe. A detailed analysis of the differences in socio-economic characteristics is not possible because of the low responses - 1 person from Xengxe perceiving other machinery to be important and 5 people from Nyaniso perceiving tractors to be important.

### 6.4.4 Summary

Two aspects deserve comment in a consideration of the peoples' perception of technology. The first, revolves around the tractor as the 'machine' which could help increase production, and the second concerns the response from Xengxe. Tractors received great acclaim, especially from the Xengxe respondents, which in the light of their relative lack of knowledge about them, pointed to a certain mystique which they (tractors) held for the respondents. The response from Xengxe was, once again, greater than that of Nyaniso and was predominantly male. The above finding reinforces the fundamental differences between the two communities which has been a recurrent theme of this section.

## II. KNOWLEDGE FACTORS

The viability of Black education has been questioned (Horrell, 1968; Wilson and Thompson, 1971) and it was thought important to gauge the attitude of the people themselves, since this would be some indication of its importance to them. The focus in this instance was on the school's relevance to agriculture since both communities were rural.

## 6.5 THE RELEVANCE OF SCHOOL EDUCATION

### 6.5.1 The Image

The image of the people in relation to the relevance of school education was based, firstly, on the question as to whether the people perceived school education to benefit agriculture. The responses and the corresponding socio-economic characteristics are listed in Table 6.12.

TABLE 6.12. Responses to School as an aid to Cultivation and the corresponding Socio-Economic Characteristics in both Communities

| Knowledge Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| School perceived as an aid to cultivation: | | | | | | | | | |
| 1. Yes | 68 | 89 | 54 | 2 | 2 | 71 | 56 | 44 | 51 |
| 2. No | 8 | 11 | 65 | 3 | 0 | 38 | 38 | 62 | 38 |
| | 76 | 100 | | | | | | | |

Of the 76 respondents, 89% considered school to benefit agriculture while 11% did not. This finding demonstrates a positive attitude towards the school in relation to agriculture.

It was not possible to differentiate the type of people who considered school education to benefit agriculture and those who did not, because the low negative response (8 people) does not allow comparison of their socio-economic characteristics.

### 6.5.2 Contrasts between the Communities in relation to the relevance of School Education

Table 6.13 shows that the majority (68%) of those who perceived the school to benefit agriculture were respondents from Xengxe, while the majority (7 responses) of those who did not perceive the school to benefit agriculture were from Nyaniso. The latter group of peoples' response was too low to justify an analysis of their socio-economic characteristics. In addition, the contrasts between the people from Xengxe and Nyaniso who did perceive the school to aid agriculture, with reference to their overall sample characteristics, did not reveal any noteworthy findings. It seems, therefore, that the lower response by the

respondents in comparison to the Xengxe respondents (22 as opposed to 46 - Table 6.13) is not linked to differences in socio-economic characteristics between the groups.

TABLE 6.13. Responses to School as an aid to Cultivation and the corresponding Socio-Economic Characteristics between Communities

| Knowledge Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage | | Percentage church membership |
| | | | | | | | | M | F | |
| School perceived as an aid to cultivation: | | | | | | | | | | |
| 1. Yes | Xengxe | 46 | 68 | 55 | 1 | 2 | 89 | 72 | 28 | 48 |
| | Nyaniso | 22 | 32 | 53 | 3 | 2 | 50 | 23 | 77 | 77 |
| Total | | 68 | 100 | | | | | | | |
| 2. No | Xengxe | 1 | 12 | - | - | - | - | - | - | - |
| | Nyaniso | 7 | 88 | 63 | 3 | 0 | 27 | 29 | 71 | 43 |
| Total | | 8 | 100 | | | | | | | |

### 6.5.3 Summary

Three findings emerge in a summary of the perceived relevance of school education. Firstly, a large majority of the 76 respondents (89%) perceive the school as benefitting agriculture. Secondly, although the majority of positive responses came from Xengxe, as has been the pattern, the response from Nyaniso is greater in relation to school education than for the previous aspects of this chapter. Thirdly, links between the image and socio-economic factors did not emerge. School education then, seems important to the two communities, but a demonstration of the extent of the influence that education has on subsistence agriculture, will have to await further research.

## 6.6 THE RELEVANCE OF RADIO PROGRAMMES

### 6.6.1 The Image

Preliminary interviews with people in the two communities, before the survey was undertaken, revealed that radio programmes on agriculture were followed. By asking if the people found the programmes helpful, it was hoped that not only the image of the people be ascertained in this regard, but also the potential of the programme. Table 6.14 outlines the responses and the socio-economic characteristics.

TABLE 6.14. Attitudes towards Radio Programmes on Agriculture and corresponding Socio-Economic Characteristics in both Communities

| Knowledge Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage | | Percentage church membership |
| | | | | | | | M | F | |
| Radio programmes perceived helpful | | | | | | | | | |
| 1. Yes | 26 | 47 | 56 | 2 | 3 | 92 | 69 | 31 | 73 |
| 2. No | 29 | 53 | 58 | 1 | 1 | 62 | 59 | 41 | 45 |
| Total | 55 | 100 | | | | | | | |

While the difference in percentage between those who do and those who do not consider the radio programmes helpful, is small (6%), the fact that the majority of the respondents (53%) did not consider the programmes to be important, is notable.

### 6.6.2 Links between the relevance of Radio Programmes and Socio-economic Characteristics

Differences appear at an aggregate level in four of the six socio-economic characteristics listed in the above table. While the difference between the averages in relation to education and field size for the two sets or respondents does not seem large,

closer analysis outlines certain trends. The differences and trends are listed below.

(i) Of those who considered the radio programmes to be helpful, 54% fell into the education bracket of Standard 2 and below. The equivalent percentage for those who did not perceive the programmes to be helpful, was 76%.

(ii) The group that perceived radio programmes to be helpful, had 77% of their number working fields of between 1 and 3 morgen, while the figure for the second group was 90%.

(iii) The difference between the two groups in relation to previous employment in town was 30% favouring those who perceived the programmes to be helpful.

(iv) The people who considered the radio programmes to be helpful, had a church membership of 25% higher than the second group.

The people who perceive the radio programmes to be helpful are on average more highly educated, work larger fields, have a larger percentage of people previously employed in towns and have a higher church membership than those who do not consider the programmes helpful. These differences, with the exception of field size, suggest a more western outlook for those who perceived the radio programmes to be helpful.

### 6.6.3 Contrasts between the Communities in relation to the relevance of Radio Programmes

Table 6.15 reveals that the differences between the respondents of Xengxe and Nyaniso are great. 77% of those who felt the radio programmes were helpful were from the Xengxe community, while the Nyaniso response was 23% (6 people). Much the same pattern is observable with regard to those who did not consider the programmes helpful - 83% were from Xengxe and 17% (5 people) from Nyaniso. The trend that emerges is not one in which different attitudes are held in different communities, but the response to both attitudes differs between Xengxe and Nyaniso. The inference drawn from the percentage responses is that the people of Xengxe, whether they find the programmes instructive or not, are more involved in agriculture. The total response from Nyaniso, on the other hand, was 11 people which suggests a negative attitude.

TABLE 6.15. Attitudes towards Radio Programmes on Agriculture and corresponding Socio-Economic Characteristics between Communities

| Knowledge Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Radio programmes perceived helpful | | | | | | | | | | |
| 1. Yes | Xengxe | 20 | 77 | 52 | 2 | 3 | 95 | 70 | 30 | 65 |
| | Nyaniso | 6 | 23 | 69 | 5 | 2 | 83 | 67 | 33 | 100 |
| Total | | 26 | 100 | | | | | | | |
| 2. No | Xengxe | 24 | 83 | 57 | 1 | 1 | 67 | 67 | 33 | 38 |
| | Nyaniso | 5 | 17 | 62 | 3 | 2 | 40 | 20 | 80 | 80 |
| Total | | 29 | 100 | | | | | | | |

In reviewing the differences between the socio-economic characteristics of the two communities, the low response to both attitudes by Nyaniso tends to make the findings suspect. For example, the relatively large differences in the average field size of 3 morgen between the two communities for those who considered radio programmes helpful was inflated by 1 of the 6 respondents from Nyaniso who worked an abnormally large field of 12 morgen - the highest of any person interviewed.

6.6.4 Summary

The general image of the people was reasonably equally divided in relation to the relevance of radio programmes on agriculture, 47% considering the programmes relevant and 53% not. Links between the image and the socio-economic characteristics emerged; education, previous employment in town and church membership being the most important. The links suggested a more western outlook for those who perceived the programmes to be relevant. The response from Nyaniso was, again, poor because only 11 people responded to the question and this low response meant that further analysis, linking socio-economic characteristics to the image between communities, could not be undertaken. Overall, the impact of radio programmes seems limited in Xengxe and Nyaniso for three reasons. Firstly, only 55 people of the 100 in the sample responded to the question on radio programmes concerned with agriculture. Secondly, of the 55, 29 said that the programmes were not helpful and thirdly, of those who considered the programmes to be relevant, only 6 could state what aspects they had found helpful.

## III. ORGANIZATIONAL FACTORS

Organizational factors as outlined by the agricultural framework in Chapter 3, include aspects such as government services and policies. The focus in this case will be on the extension service. In order to gauge the importance of the extension service in the minds of the farmers, three basic questions were asked. Firstly, whether it was advantageous to adopt the ideas of the extension officers. Secondly, if they thought so, what had they adopted, and thirdly, if they did not think it advantageous, they were asked to give the reasons.

## 6.7 THE IMPORTANCE OF THE EXTENSION SERVICE

### 6.7.1 The Image

The following findings emerged from the question which asked the people if it was advantageous to adopt the ideas of the extension officers - Table 6.16.

TABLE 6.16. Attitudes towards the Adoption of Extension Ideas and corresponding Socio-Economic Characteristics in both Communities

| Organizational Factors | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Adoption of extension ideas | | | | | | | | | |
| 1. Yes | 78 | 82 | 55 | 2 | 2 | 63 | 58 | 42 | 62 |
| 2. No | 17 | 18 | 62 | 3 | 1 | 53 | 29 | 61 | 53 |
| Total | 95 | 100 | | | | | | | |

The large majority (82%) of the 95 respondents considered that it was advantageous to adopt the ideas of the extension workers. When the people were asked, however, what ideas they had adopted, only 6 responded. The examples given were: 'Correct' ploughing

methods, the use of fertilizer, crop rotation, better preparation of the soil, medicine for cattle, tips on rearing fowls and pigs as well as advice on cattle feed. Despite the fact that most people thought it advantageous to adopt the ideas of the extension officers, 25 gave reasons why they had not actually adopted these ideas. These reasons are summarised in Table 6.17.

TABLE 6.17. Reasons for not adopting Extension Ideas

| Reasons | Respondents | |
|---|---|---|
| | n | % |
| No contact | 10 | 40 |
| Infirmity | 5 | 20 |
| Not allowed at meetings | 3 | 12 |
| No time for meetings | 3 | 12 |
| Don't understand | 2 | 8 |
| No demonstrations | 2 | 8 |
| Total | 25 | 100 |

The largest category, 40% of the responses, referred to the fact that there was no contact between the extension officers and the people themselves. The age and infirmity of 5 respondents made their adoption of extension ideas impossible, while 2 respondents said that they were in fact driven away from the meetings because they were women and that meetings were for men only. The meetings referred to in this case were the village committee meetings to which the extension officers are closely linked. The respondents who stated that they had no time for the meetings, were referring to meetings called by the extension officers themselves to which both sexes may go. The final

reason given by 2 respondents was that the extension officers do not demonstrate, but 'preach'. An aspect that deserves mention is that the 25 respondents who gave reasons for not adopting extension ideas were all members of the Nyaniso community. No person from Xengxe responded to the second and third questions with regard to the adoption of extension ideas. The reason for this non-response was that there was no resident extension officer in Xengxe and the people expressed dissatisfaction about the fact that they did not come into contact with any extension officer. They could, however, respond to the first question, whether one should adopt the ideas of an extension officer, because the question is not limited to people who comeinto regular contact with extension workers.

The image that emerges with regard to the extension service, therefore, is one in which the service is seen as a desirable institution, but one, which in practice, has little impact.

The differences in socio-economic characteristics between those who considered it advantageous to adopt extension ideas and those who did not, did not suggest that any links existed between the views and the characteristics. An exception was that of the sex composition. Those who thought it helpful to adopt extension ideas had 27% more males than the other group. The difference in sex division seems to reinforce the previous findings in which a group with a larger proportion of males tends to respond more positively than when the females dominate the responses.

## 6.7.2 Contrasts between the Communities in relation to the importance of the Extension Service

TABLE 6.18. Attitudes towards Adoption of Extension Ideas and corresponding Socio-Economic Characteristics between Communities

| Organizational Factors | Community | Respondents | | Socio-Economic Characteristics | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | Average age (years) | Average field size (morgen) | Average education (standard) | Percentage previously employed in town | Sex: percentage M | Sex: percentage F | Percentage church membership |
| Adoption of Extension Ideas | | | | | | | | | | |
| 1. Yes | Xengxe | 48 | 62 | 55 | 1 | 2 | 67 | 75 | 25 | 48 |
| | Nyaniso | 30 | 38 | 54 | 2 | 2 | 57 | 30 | 70 | 83 |
| Total | | 78 | 100 | | | | | | | |
| 2. No | Xengxe | 2 | 12 | - | - | - | - | - | - | - |
| | Nyaniso | 15 | 88 | 62 | 3 | 1 | 47 | 29 | 71 | 53 |
| Total | | 17 | 100 | | | | | | | |

Different percentage responses emerged in Table 6.18 between the communities. Of the 78 respondents who considered it advantageous to adopt extension ideas, 62% were from Xengxe and 38% resided in Nyaniso. The percentage response to the negative attitude towards extension ideas was 12% from Xengxe and 88% from Nyaniso. Despite the fact that the Xengxe respondents did not come into contact with an extension officer, their responses show a positive attitude to the extension ideas. Whether the responses from Xengxe are linked to specific ideas or just the desire for aid (as was expressed by some respondents) is uncertain, since the dissemination of ideas must be limited in the absence of an extension officer.

Analysis, by comparing the socio-economic characteristics of the respondents to their respective overall sample characteristics, did not reveal any important trends for those who considered

it helpful to adopt extension ideas. In addition, the low response by Nyaniso in relation to the group that did not consider it worthwhile to adopt extension ideas, does not allow analysis.

### 6.7.3 Summary

In summarising the main findings from this section, three aspects stand out. The first concerns the large positive response, in that 82% of the people think it beneficial to adopt the ideas of an extension officer. This positive response, however, must be qualified in that only 6 people could say how the extension service had helped them. Furthermore, 25 people stated reasons for not adopting the ideas. When the communities were compared, there were 48 positive responses from Xengxe and 30 from Nyaniso. In this regard, the number of positive responses from Nyaniso shows an increase when compared to the number of responses to other factors in the chapter, for example, the economic aspects. Despite an increased positive response, Nyaniso had the greater number of negative respondents (15 people) who stated that it was not advantageous to adopt extension ideas. Linking the differences in image to differences in socio-economic characteristics of the people, did not prove fruitful in this section. The findings, then, connected to the questions on the extension service reveal the views of the people, but attempts to link their views to the type of people holding them, was less successful.

## 6.8 DISCUSSION OF FINDINGS

Two main themes emerge from this section on economic factors. The first deals with a move away from traditional ideas about the division of labour as was demonstrated by the fact that the category

including men, women and children was seen as the most important labour grouping. This finding carries certain implications. On the one hand, men seem prepared to involve themselves in the full range of cultivation activities which suggests a greater potential for the improvement of agriculture than if the women are responsible for the majority of the farming practices and household activities. On the other hand, since women already play an important role agriculturally, and since traditional ideas about the division of labour are decreasing in importance, the greater inclusion of women into the running of the community could aid agriculture. Participation in certain village committee meetings and frequent meetings with extension officers by women, could make some impact on the communities.

The second theme that deserves mention is that human factors were perceived important with regard to the adequacy of the crops and increasing production. This finding reveals another avenue which affects the extension service - a focus on the human aspects of cultivation could result in an improvement in agriculture.

The hypothesis, that links exist between the perception and socio-economic conditions, seems less important with regard to economic factors. Although links were shown to exist, the number of responses was often low, a fact that tended to hamper the relevance of the findings. In addition, a lack of clarity prevailed in relation to a large number of the links.

Differences between the communities pointed once again to Xengxe as the community with the greater bias towards agriculture.

Furthermore, findings in this section suggested that the greater number of people reflecting higher educational levels, the more negative their attitude towards agriculture. Whether attitudes are negative or not, the chapter shows that in terms of yields, agriculture in the two communities performed poorly. Very little food was produced above basic subsistence requirements, and in the case of Nyaniso, yields are largely below subsistence levels.

The general image that emerges in relation to the knowledge and organizational factors is firstly, that the school is seen to aid agriculture. Secondly, both the applicability and the effectiveness of the agricultural radio programmes and local-level extension work is very limited. Numerous links emerged between the knowledge and organizational factors, and socio-economic characteristics. For example, perceptions with regard to agricultural radio programmes were linked to five characteristics - education, field size, church membership, previous employment in town, and sex division. Attitudes towards the extension service were also linked to field size, previous employment in town, and sex division. The hypothesis stating that a relationship exists between the perceptions and socio-economic characteristics is reinforced. Contrasts between communities did not emerge with regard to the perception of whether school aided agriculture and the responses to the applicability of extension ideas were too few to be analysed. On the other hand, with regard to the helpfulness of the agricultural radio programmes, Xengxe once again emerged as having the greater agricultural bias.

The acceptance of the school as an aid to agriculture by the majority of the respondents carries important implications in terms of the school as an active effort in the improvement of agriculture. By contrast, further research into the applicability of agricultural programmes needs to be carried out. The most negative attitudes were expressed towards the extension service, the agency supposed to aid the farmer most. Reorientations in the approach of the extension service are necessary for it to gain credibility in Xengxe and Nyaniso.

The investigation of how the people view the extension service concludes the analytical section of the thesis. The analysis has covered five sets of factors - physical, socio-cultural, economic, knowledge and organizational. The findings, therefore, shed light on a wide range of attitudes, views and preferences. Attempts were also made to outline the types of people holding to certain views as well as to contrasting conditions between the communities. It will be the task of the following chapter to 'draw all the threads together' and evaluate the project as a whole.

# CHAPTER 7

# C O N C L U S I O N

The image that the people in Xengxe and Nyaniso have of their agricultural system is revealed in some measure by the findings as a whole. Some are considered important and some less important. An overview of the investigation will not mean that the findings will be repeated in detail. Rather, the aim of this chapter is to outline the dominant themes that emerge from the findings, mention the implications of the most important findings, assess the research method, and point to further areas of research.

## 7.1 MAIN FINDINGS AND IMPLICATIONS

The majority of the people perceived two physical elements to limit the cultivation of crops - field size and rainfall. On the other hand, the majority of the people perceived the soil to be fertile. It is noteworthy that there was no clear preference for agricultural activities such as cultivation, in relation to the other socio-cultural factors. One exception revealed itself - agriculture in comparison to employment in town. In this case agriculture was preferred by 84% to 16%. The most important preference with regard to the division of labour was not a division, but a combination comprised of men, women and children. The major means of increasing production was perceived to be human practices such as correct ploughing, correct tilling and fertilization. Tractors were considered to be the major technological device whereby production could be improved. The school is perceived as an

important institution aiding agriculture, whereas radio programmes on agricultural topics and the extension service seemed only superficially important. The superficiality is shown by the fact that only 6 people in each case, were able to specify how they were helped by the agricultural radio programmes and the extension service.

A number of links between the images and the socio-economic characteristics emerged. Details of the specific links are found at the ends of Chapters 4, 5 and 6. Some links were more important than others in that they could be logically explained. For example, a preference for social occasions seemed linked to a number of people who were very old. The link between social occasions and age was considered important, because comments made by the people, that they were 'too old or ill to till', reinforced the link. A further example showed a preference for church to be linked with those who exhibited a higher educational level. This particular link was also considered valid because the church and the school have been shown to be partners in their transmission of western culture in the Ciskei (Mayer, 1961).

Despite a considerable amount of unravelling and pursuing of the links, the only distinct group of people in the survey whose image was linked to a wide range (five of the six) socio-economic characteristics was that which rated social occasions first (Chapter 5). Other important socio-economic characteristics that seemed linked to certain perceptions were church membership, previous employment in town and educational level. The majority of people who were previously employed in town and those that had higher educational levels, held, in general, a negative attitude towards agriculture.

On the other hand, in Chapter 4, soil fertility and field size were considered favourably by groups of people showing church member and male (as opposed to female) majorities. No reasonable explanations could be given for the links that emerged in relation to the economic factors in Chapter 6. This finding seems to be a reflection of the fact that the economic factors were not rated very highly in the minds of the people.

As stated in Chapter 3, the hypothesis that there is a link between the socio-economic characteristics of groups of people and their images of, or preference for the factors of the agricultural framework, served merely as an orientation for the section of the research dealing with socio-economic characteristics. Because of the nature of the data, the acceptance, rejection and strength of the links were not able to be stated categorically. The fact that links emerged, suggests that the hypothesis is generally valid, but more importantly, it points to a field for future research if the problem of data can be overcome.

The findings related to differences between the communities showed similar features as those above. For instance, those dealing with the image are considered important, while the links between perceptions and socio-economic characteristics cannot be adequately analysed, with one exception. Responses were often too low for a comparison between the average characteristics of the groups. For example, only one person from Xengxe responded relatively with regard to the means of increasing production whereas the negative response from Nyaniso was 29 people. A comparison of the characteristics between the respondents from the communities in this

instance is invalid. The exception mentioned above, concerns those who rated social occasions first. Analysis showed that all resided in Nyaniso and that all six of the socio-economic characteristics of the group differed from those of the Nyaniso community as a whole. The differences in socio-economic characteristics suggest a link between the characteristics and their preference for social occasions.

The image that is revealed by contrasting the communities, points to the fact that although agriculture did not appear to be a predominant preference overall, the people of Xengxe have a more positive attitude towards agriculture. This was shown to be the case for the sections dealing with socio-cultural, economic, knowledge and organizational factors, but was less obvious with regard to the physical factors. In the case of the physical factors, the image displayed by the Xengxe respondents was that the field sizes were small and the rainfall poor. These negative attitudes cannot automatically be equated with a bias away from agriculture because small fields and poor rainfall could indeed be limiting factors in agricultural production. The negative appraisal of the situation by the Xengxe respondents could, therefore, reflect a greater awareness on their part of actual conditions and could in fact show a sensitivity towards agriculture.

Having assessed the approaches and the themes that emerge from the findings, the policy implications of these will now be considered. The first statement that deserves comment is that agriculture does not appear to be a clear preference in the minds of the people. In fact, some of the comments made by the respondents showed that

agriculture was merely a means of survival. Numerous implications arise. The most fundamental concerns an assessment as to whether the lack of a positive attitude by the people is realistic.

In other words, do existing conditions in the communities offer any potential for agricultural improvement? An assessment of the potential of the communities could lead to a number of approaches concerned with the improvement of agriculture. For example, if the conditions within the communities offer real potential for agricultural improvement, efforts could be concentrated on changing the less than positive image of the people. Other possible measures could involve concentrating efforts and capital on people who show potential in the agricultural sphere, or more drastic, opening land to agencies which would work it on a commercial basis. The latter measure is appropriate where conditions are unsuitable for the small-time farmer and large scale capital outlay, mechanization and expert knowledge are required.

A recurrent theme in the study has been the greater bias towards agriculture on the part of Xengxe. If the finding, that certain communities display more positive attitudes towards agriculture than others, is shown to hold throughout the Ciskei, then, incorporated in extension policy could be a programme meeting different levels of motivation. Furthermore, a decision might have to be made as to whether extension efforts should concentrate on those communities showing the greater potential.

A further aspect deserving attention was the degree of ignorance displayed by the people with regard to the reasons for the

inadequacy of crops and the means of increasing production. Aligned to the above findings is the minimal impact in concrete terms that the extension and related services have made on the people. The implications relate to the extension service most specifically. Firstly, the ability of the extension service to motivate people to have positive attitudes towards their fields is questioned. Secondly, because most extension work is biased towards physical planning (Butler et al, 1977) more emphasis could be placed on the attitudes of the people themselves. The issues must be seen in a broader context than merely the extension service. Numerous aspects can be considered responsible, such as labour migrancy, and the lack of integration between peasant and commercial economies, but the extension service was highlighted in this case because the degree of ignorance found in relation to agricultural production. The lack of knowledge and the general negative attitude reveals that the creation of a commercial class of farmer as advocated by the Tomlinson Commission (Government Printer, 1955) has not been realized, and the task of creating a commercial class of farmer is first and foremost an extension task.

## 7.2 ASSESSMENT OF RESEARCH METHOD

In assessing the approach as a whole, it must be remembered that the investigation was a pilot study. As such it is considered to have achieved its purpose. It has revealed some important findings, while other findings have been of less importance. Those of less importance are related to the use of socio-economic characteristics to try and explain why the different images are held.

The process of attaining the image can be described as beginning with a percentage response to a question and then deriving a general statement from the percentage response. For example, findings revealed that 52% of the people rate agriculture first in comparison to the first set of socio-cultural factors. The general statement derived from the response was that agriculture does not appear to have been a dominant preference. The above method might not stand rigorous statistical scrutiny, but has been used elsewhere by, among other, Saarinen (1966) and Merchant and Marotz (1975). It is, therefore, considered accepted within the perception approach. Alternative ways arriving at images have been employed. Examples are works obtaining their data from literature, projective psychological techniques and the mental map approach, all outlined in Chapter 2. The dearth of literature about the two communities and the inapplicability of the other two approaches, given the aims of this thesis, suggests that the method used was the most suitable for arriving at the different images that the people held.

The rationale behind using socio-economic characteristics was outlined in detail in Chapter 3 and their use did isolate the group that rated social occasions first as well as suggesting why certain preferences were held. The limitations related to the use of socio-economic characteristics were a function of the data and it seems in retrospect, that not too much store can be placed on the characteristics in non-western rural societies. The reason for the above statement is that socio-economic characteristics are derived from, and most closely related to commercial societies. While the problem of the data has already been mentioned, the

applicability of the socio-economic characteristics deserves further mention. The characteristics themselves seem applicable to the communities as mentioned in Chapter 3, but it seems that the study underestimated the complexity of image formation. The basis on which images are formed could present an orientation for further research in this field because it is important for planning purposes. Not only does one want to know the images/attitudes/preferences of the people for whom one is planning, but the type of people who hold those images in terms of age, sex and education. The type of people will determine the type of plan.

## 7.3 POINTERS TO FURTHER RESEARCH

A priority as far as further research is concerned is an investigation of how the image relates to the real world and how it relates to behaviour. The restraints placed upon the present investigation made it practical to focus only on the image, but comparing the image to the real world enables one to ascertain to what degree the image reflects reality. A finding of this sort would have considerable policy implications. For example, if the image showed a largely distorted view of reality, the image would need to be changed assuming that the distorted image was a drawback. If an unsatisfactory condition prevailed despite a close correspondence between the image and reality, then a change in the real world might be necessary. A concrete example would be a farmer's image or evaluation of rainfall. If his evaluation of the rainfall as low is a distortion of actual conditions, then the logical approach would be to point out his error. If, on the other hand, his evaluation reflects the real situation, an improvement in agricultural

production might be dependant on a dam being built from which he could irrigate. Besides ascertaining the image of the people, a detailed analysis would have to be made of the real world if the image is to be compared to it. The real world need not necessarily be the physical environment alone, but could include aspects such as the amount of the harvest being sold, to use an agricultural illustration. In this way the actual conditions of the field of investigation could be built up. In many underdeveloped areas this real world information is lacking as was the case with Nyaniso and Xengxe. Since a detailed inventory of actual conditions is a prerequisite for any agricultural development programme, it should not be considered as a tedious step linked to the perception approach alone. Details about behaviour and how it relates to the image are the other aspects of the approach mentioned above. Since behaviour is some function of the image (Downs, 1970), an understanding of how behaviour is linked to the image is important. For example, if a person's image changes, it is helpful to note what changes have or will take place in his behaviour. Similarly, if his behaviour has changed it is important to be able to ascertain the image that he now holds. The research orientation outlined above is derived from the Downs' conceptual schema described in Chapter 3. It is considered an important step in understanding how man views his environment, how he behaves in it, and to what degree the views and behaviour are congruent with the real world.

Research into agriculture will continue. Nevertheless, the urgency of an approach that explains the attitudes and activities of subsistence farmers is great. The use of perception theory is one such

approach and this investigation has shown that the perception approach has some potential despite agriculture being a complex cultural institution.

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APPENDIX A

## Classification of Factors Affecting Agriculture Development

### Physical Input Factors

1. Nonhuman physical inputs
   - a. Land
   - b. Climate
   - c. Seeds
   - d. Water
   - e. Fertilizer
   - f. Pesticides
   - g. Structures
   - h. Work animals
   - i. Other animals
   - j. Tools and machinery
   - k. Fuel and power other than animal power
2. Labour

### Economic Factors

1. Transport, storage, processing, and marketing facilities for products.
2. Facilities for the supply and distribution of inputs including credit.
3. Input prices, including interest rates.
4. Product prices, including prices of consumer goods.
5. Taxes, subsidies, quotas

### Organizational Factors

1. Tenure, land.
2. Farm size and legal form.
3. General government services and policies
4. Voluntary and statutory farmers' organizations for:
   - a. Coordinating physical input use, e.g. irrigation associations, tractor stations.
   - b. Economic services, e.g. purchase, sale, credit associations and cooperatives.
   - c. Social services, e.g. health centers, schools, family planning centers.
   - d. Local government.
   - e. Diffusion of knowledge, e.g. adult-education classes, youth clubs.

### Socio-Physcho-Cultural Factors

1. Integration of agricultural institution, practices and values within the technosocial matrix of the nation.
2. Public administration factors, structure, values mode of operation of the innovating bureaucracy.
3. Social structure, cultural values, and dynamics of peasant communities.
4. Process of sociocultural change, barriers, and motivation in the innovative sequence, functional harmony or disharmony in society as its constituent parts change.

### Knowledge Factors

1. Organization of basic and applied research.
2. Diffusion of knowledge relating to:
   - a. Technical knowledge, e.g. agronomy, plant genetics, soil science, water management, agricultural engineering, pest control, home technology.
   - b. Economic knowledge, e.g. land economics, general economics, farm management.
   - c. Policy, e.g. politics, public administration, planning.
   - d. General education, e.g. literacy, adult education, mass communication.

SOURCE: Hapgood-Millikan (1965), reprinted in Wharton (1970)

APPENDIX B

# Q U E S T I O N N A I R E

## THE IMAGE OF AGRICULTURE IN THE CISKEIAN COMMUNITIES

### I. PHYSICAL FACTORS

Land:

1. How big are your lands? _____

2. How fertile are your lands?

| fertile | reasonable | infertile |
|---|---|---|
| | | |

3. Are they less fertile than when you first started farming?

| YES | NO |
|---|---|
| | |

4. What have you done to make them more fertile?

| manure | fertilizer | other | nothing |
|---|---|---|---|
| | | | |

5. What do the other people do to make their lands more fertile?
_____

6. Are your lands close enough to your homestead?

| YES | NO |
|---|---|
| | |

7. How long does it take you to get there? _____

8. Have the lands been there as long as you have had them?

| YES | NO |
|---|---|
| | |

9. If not, is their position better now?

| YES | NO |
|---|---|
| | |

10. Could they be still better positioned?

| YES | NO |
|---|---|
| | |

11. Was the land in the same place even before you had it?

| YES | NO |
|---|---|
| | |

12. Are the lands big enough to feed your family?

| YES | NO |
|---|---|
| | |

13. How big were they before you owned them? _____

Climate:

14. Rainfall rating.

| good | fair | poor |
|---|---|---|
| | | |

15. More/less rain than before?

| more | less |
|---|---|
| | |

II. SOCIO-CULTURAL FACTORS

16. Which do you think is the most important?

| | YES | NO |
|---|---|---|
| 1. beer parties | | |
| 2. meetings with the headman and chief | | |
| 3. visiting friends and kin | | |
| 4. cultivating your fields | | |
| 5. church | | |
| 6. rituals | | |

17. Why is this important? _____

18. Would your father and grandfather have done the same?

| YES | NO |
|---|---|
| | |

19. If no, please explain _____

_____

20. Do you know anyone who thinks differently?

| YES | NO |
|---|---|
| | |

21. What would be better to work in?

| fields | town |
|---|---|
| | |

22. Did your father and grandfather think the same way about fields/town?

| YES | NO |
|---|---|
| | |

23. Do you know anyone else who thinks differently?

| YES | NO |
|---|---|
| | |

24. What is more important?

| fields | cattle |
|---|---|
| | |

25. Please give reasons for your answer _____

_____

26. Did your father and grandfather think the same way about fields/cattle?

| YES | NO |
|---|---|
| | |

27. Do you know anyone else who thinks differently?

| YES | NO |
|---|---|
| | |

## III. ECONOMIC FACTORS

### Labour

| | men | women | children | all |
|---|---|---|---|---|
| 28. Who should do the ploughing? | | | | |
| tending (weeding, hoeing, etc.)? | | | | |
| reaping? | | | | |

29. Have you always worked your lands as above?

| YES | NO |
|---|---|
| | |

| | men | women | children | all |
|---|---|---|---|---|
| 30. If no, who did ploughing? | | | | |
| tending (weeding, hoeing, etc.)? | | | | |
| reaping? | | | | |

31. Would you change (e.g., men tending/reaping)?

| YES | NO |
|---|---|
| | |

| | men | women | children | all |
|---|---|---|---|---|
| 32. If yes, ploughing? | | | | |
| tending? | | | | |
| reaping? | | | | |

33. Do you know anyone else who has changed?

| YES | NO |
|---|---|
| | |

34. Do you consider that the occupants of your homestead grow enough food for their own use?

| YES | NO |
|---|---|
| | |

35. If not, why is there not enough food? _____

36. In what ways could more be produced (e.g., children helping, longer hours worked)? _____

37. Do you do (consider doing) this?

| YES | NO |
|---|---|
| | |

38. Do you plan to grow more maize for both your family and for sale?

| YES | NO |
|---|---|
| | |

39. If no, why not? _____

40. If yes, how do you plan to grow more maize? _____

41. What tools do you use to help you work the land? _____

_____

42. Do you know other people who use different tools?

| YES | NO |
|---|---|
| | |

43. Have you always used the same tools?

| YES | NO |
|---|---|
| | |

44. If no, state _____

45. What tools would help you to produce more? _____

IV. KNOWLEDGE FACTORS

46. Do you think that school helps you to cultivate better?

| YES | NO |
|---|---|
| | |

47. Do you listen to the radio programmes on agriculture?

| YES | NO |
|---|---|
| | |

48. Do you find them helpful?

| YES | NO |
|---|---|
| | |

49. If yes, please enlarge _____

_____

V. ORGANIZATIONAL FACTORS

Government policies and services:

50. Do you think that one should adopt the ideas of the extension officers?

| YES | NO |
|---|---|
| | |

51. If yes, what have you done? _____

_____

52. If no, why? _____

53. Do you belong to a farmers' association?

| YES | NO |
|---|---|
| | |

54. If yes, does it help with:

| | YES | NO |
|---|---|---|
| ploughing | | |
| tending | | |
| reaping | | |
| better seeds | | |
| funds | | |
| other? | | |

55. If you do not belong, why? _____

_____

Tenure:

56. Have you lived here all your life?

| YES | NO |
|---|---|
| | |

57. If no, where did you live before? _____

58. Is it your land?

| YES | NO |
|---|---|
| | |

59. If no, on what terms do you occupy it (e.g., rent it, work it for someone else)? _____

60. From whom did you get the land?

| | YES | NO |
|---|---|---|
| Chief | | |
| Headman | | |
| Government | | |
| Father | | |
| Other? | | |

State other _____

61. How long do you intend keeping these lands? _____

62. Can you do anything you like with them?

| YES | NO |
|---|---|
| | |

63. Can anyone take them away from you?

| YES | NO |
|---|---|
| | |